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2004

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The EU Banana import regime and the position of Colombia

by

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This version: 20 December 2004

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Introduction

This study discusses the Common Market Organisation for Bananas, which was put in place in the European Union in 1993, with a view to assessing the implications of the change in 2006. By 1 January 2006, at the latest, the EU will change the organisation from the present system with quotas for various producing countries and differential tariffs (and tariff preferences) for these groups, to a system based on tariffs only.

This change of system implies that the EU changes its bound tariff on the import of bananas, and under the WTO rules this requires consultations with the countries concerned. An important element in this discussion is what tariff is likely to be equivalent to the current tariff-quota system. The present quotas are binding, both for the Latin American producing countries, and – so it seems – for the ACP countries, who are otherwise exonerated from paying the tariff of €75 per ton. The impact that these quotas have on the prices could be visible anywhere between producers and consumers, and some part of the study aims at 'locating' the quota-rent. This rent may show up at wholesale level, at import level or between export and import.
The WTO has been creating more or less official protocols for dealing with situations like this, but official rules on how to assess the impact of quotas or tariffs are not established. As part of the Uruguay Round negotiations, a procedure was developed to translate non-tariff barriers into tariffs that could be considered equivalent. But these need not be used in discussions on changes in a bound quota.
We will argue in this study that they standard procedure, through a comparison with other consuming or producing countries, may not even apply in this case. Reason is that not only will the quota on Latin American import be removed, also the access of bananas from ACP countries into the EU will be enhanced. This latter aspect has considerable effect on the former.
Three main fields are covered in this report. After the introductory Chapter 1, which shows the relative magnitudes of exports, imports and prices around the world, the EU policy over the past 12 years is reviewed. It reviews the past organisation of the banana market and its frequent changes. We will show that the country allocations that have in place did not matter much for the eventual prices facing the European consumers, although the system itself led to considerably higher prices. The proposed changes for 2006 are presented and the relevant texts of the GATT are highlighted.
In Chapter 3, we explain the theoretical issues and prepare the ground for the modelling exercise. The theory makes clear that the changes in the world market prices are likely to be important, given the weight of the EU in this market. Taking this into consideration, we derive how the equilibrium price will change after removal of the quotas and we show how a tariff equivalent can be calculated. This calculation requires an estimate of the quota-rent, and we employ two ways of deriving the quota rent (or for that matter, the tariff-equivalent in its simple application). One way is by comparing the pre-CMOB period with period after 1993. This leads to an estimate that about 8 euro cents per kg is incorporated in the international margin between Latin American producers and the EU. The other is by comparing these margins over several groups, notable with ACP producers. This leads to same result.
In addition to the presence of a quota rent in the trade with Latin American producers, we will argue for the same impact of quota rents on the trade with ACP countries in Africa. Here, there is no comparison possible with period before 1993 because another system, also limiting access to the market, was in place at that time.
In chapter 4, the way in which elasticities are derived is discussed in great detail. A range of estimates is offered for all major producing and consuming countries, so as to provide an empirical basis for the selection of the elasticities.
The application of theory and empirical findings is done in Chapter 5. We provide the results of various scenarios in which different assumptions are made on the level of a tariff in the situation after 2006. We give these in terms of export prices, import prices, tariff revenues and quantities traded.

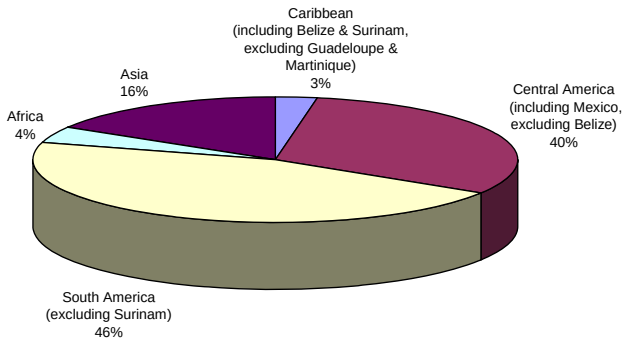
Our conclusion is that a tariff of around 6 cents per kg or €60 per ton would be sufficient to compensate the African ACP producers for the change in the system. For the Caribbean ACP producers, the equivalence is less easily reached. Their prices are likely to fall. This may call for non-market based measures

Chapter 1 The world market for bananas

1. Export supply and import demand

The primary objective of this study is to evaluate different specifications of the EU tariff only import regime to be introduced in 2006. In order to get a quick insight into the trade flows in the international banana market we first look at export supply and import demand by trade block. Figure 1 summarizes the average exports of bananas from the main exporting blocks. The exporting blocks are slightly adjusted so that the definitions of the blocks corresponds to the groupings of exporting countries distinguished in the remainder of this study[1]

Figure 1.1 Banana exports by exporting block (source: FAO STAT data, 2004)



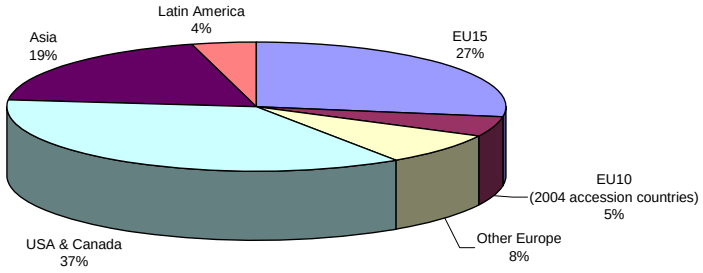
From Figure 1.1it is clear that export supply on the world market of bananas is dominated by the Central and Latin America. Slightly above 85% of all traded bananas originate from these two blocks. The dominant position of these exporting blocks is even more manifest if one considers the Asian market as a separate segment of the world market, isolated by from the rest of the world by substantial transport costs.

Likewise we can summarize the import demand of the main trade blocks. This is implemented in Figure 2. The import demand is dominated by the USA (& Canada) and Europe[2], who account for 77% of total imports. The figure also shows the share of the 2004 EU accession countries (5%) and the non-EU part of the European share (8%). Import demand from Asia, which comprises mainly Japan, China and Korea is around 19% and increasing.

[1] In particular: Mexico is included in Central America, Belize is excluded from Central America and included in Caribbean, Surinam is excluded from South America and included in Caribbean. Guadeloupe and Martinique are not included in Caribbean. The background is to include all ACP Caribbean countries to "Caribbean", and to exclude non-ACP countries (European producers).

[2] For this purpose we have used a broad definition of Europe, including the 10 countries that have accessed the EU in 2004, and also including a number of non EU countries (Switzerland, Norway, Iceland), East European countries (Bulgaria, Romania), Russia and North African countries (e.g. Algeria, Morocco).

Figure 1.2 Banana imports by importing block (source: FAO STAT data, 2004)

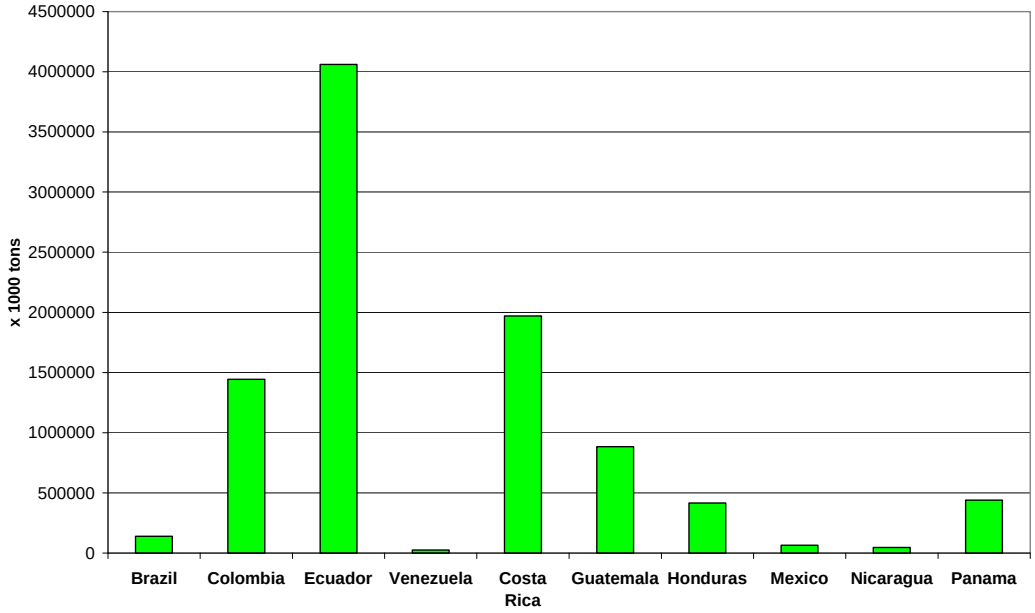


We now take a closer look to the different export supply blocks in order of quantitative importance. In Figures 1.3a to 1.3d we have presented the contribution of the main exporting countries within each block. Central and Latin American exporters are taken together in Figure 1.3a: this figure shows that Ecuador is by far the largest exporter with more than twice as much exports compared to the second largest exporter, Costa Rica. Colombia, Guatemala, Panama and Honduras follow in this order. The remaining exporters are of negligible importance. Within the Asian block the dominance of the Philippines is apparent from Figure 1.3b. Exports from the Philippines are in size between Costa Rica and Colombia. All other Asian exporters are of minor importance. Both the Caribbean and African block are much smaller compared to the Central and Latin American block and the Asian block. Within the Caribbean block the Dominican Republic stands out as the largest exporter, accounting for nearly a third of total Caribbean exports. A further group of six Caribbean countries (Belize, Saint Lucia, Jamaica, Saint Vincent, Surinam and Dominica) exports less than half of Dominican Republic exports. Grenada has negligible exports.

Likewise, we may have a closer look at the composition of import demand. This is implemented in Figure 4a to 4e. The first three figures show the European imports: the EU15 countries, the 10 countries that accessed the EU in 2004, and the remaining non-EU countries. In the first figure imports from Germany, Belgium & Luxembourg, United Kingdom and Italy constitute the larger ones. Re-exports partly obscure the underlying consumption. This is most apparent in the case of a small country like Belgium & Luxembourg, but most likely applies as well to the other larger importers[3]. Among the accession countries Poland is a sizeable importer. Russia is the largest non-EU European importer.

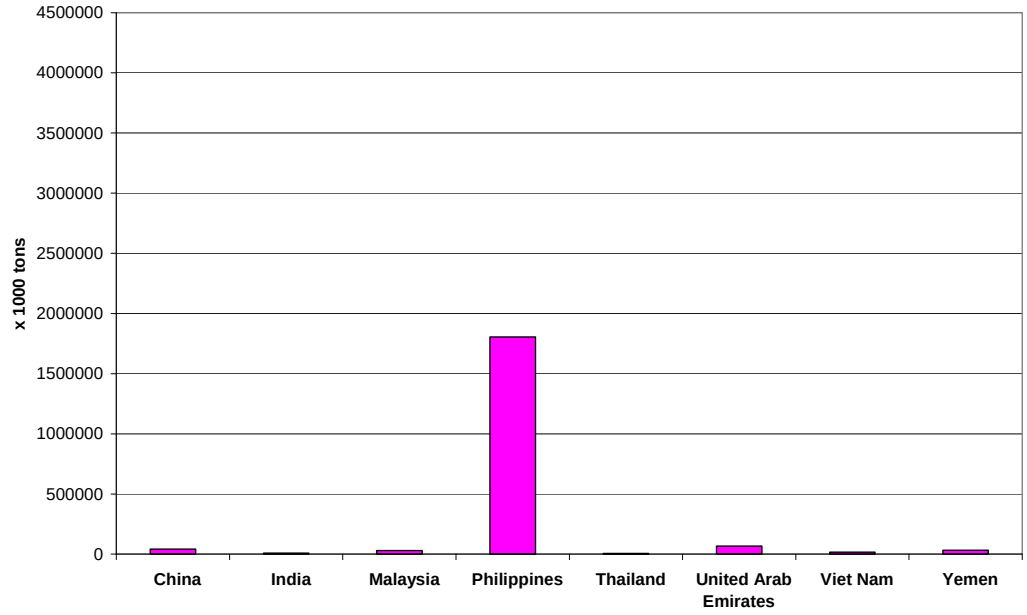
[3] It should be noted that the population size in France, UK and Italy is similar.

Figure 1.3a Central and Latin American Exporters (average 2000-2002)



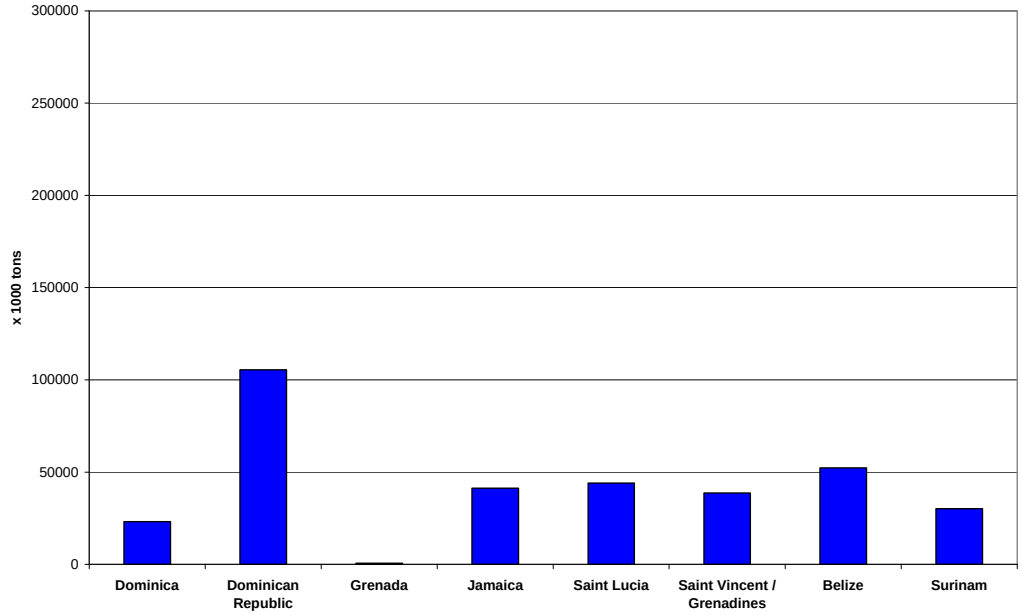
Source: FAO STAT data, 2004

Figure 1.3b Asian Exporters (average 2000-2002)



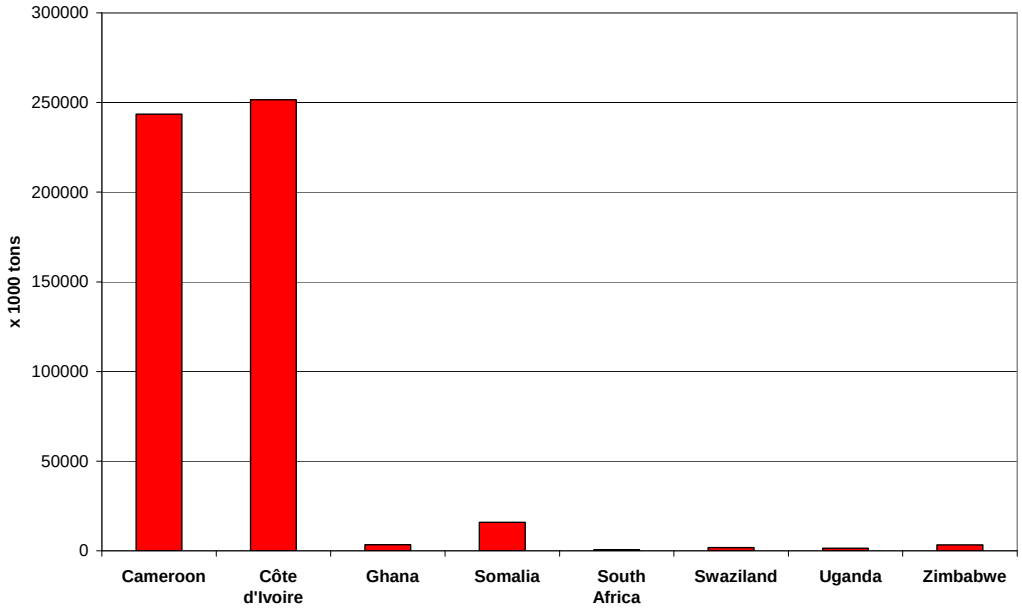
Source: FAO STAT data, 2004

Figure 1.3c Caribbean Exporters (average 2000-2002)



Source: FAO STAT data, 2004

Figure 1.3d African Exporters (average 2000-2002)



Source: FAO STAT data, 2004

Figure 1.4a European Union, 15 members, gross import (average 2000-2002)

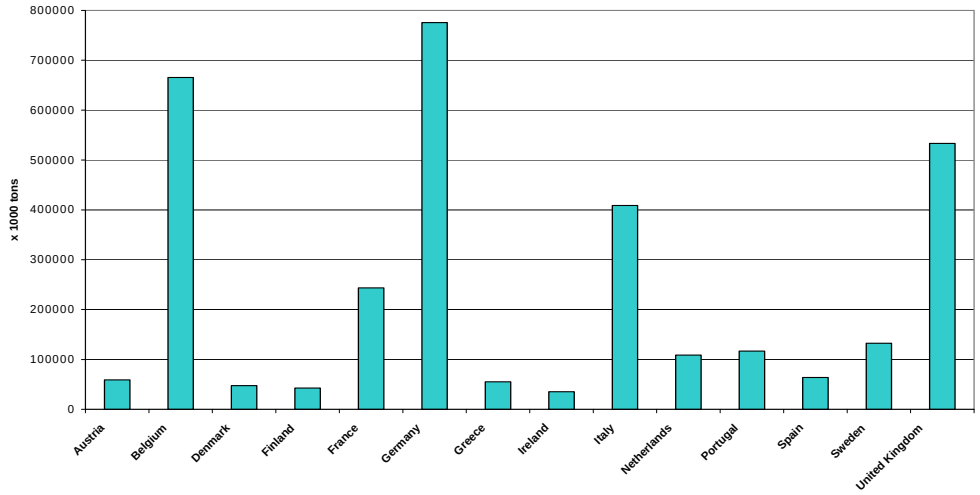


Figure 1.4b 2004 EU accession countries, gross import (average 2000-2002)

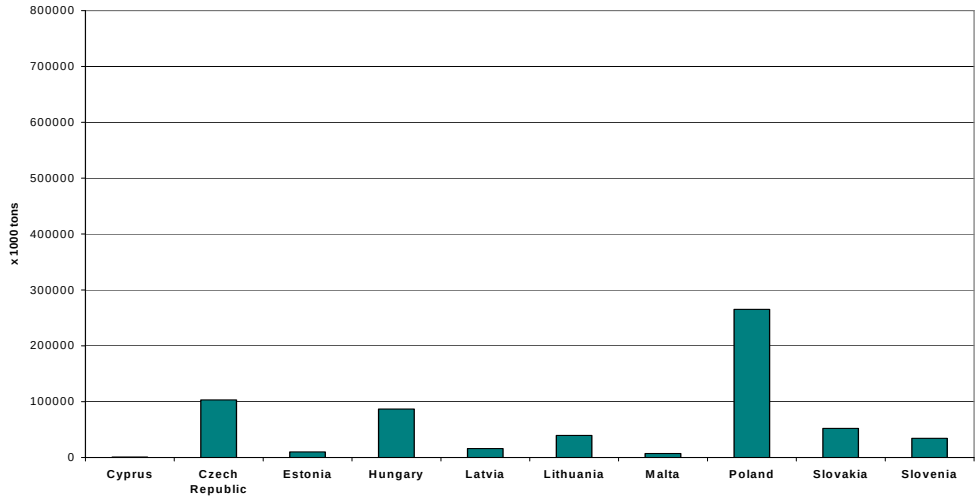
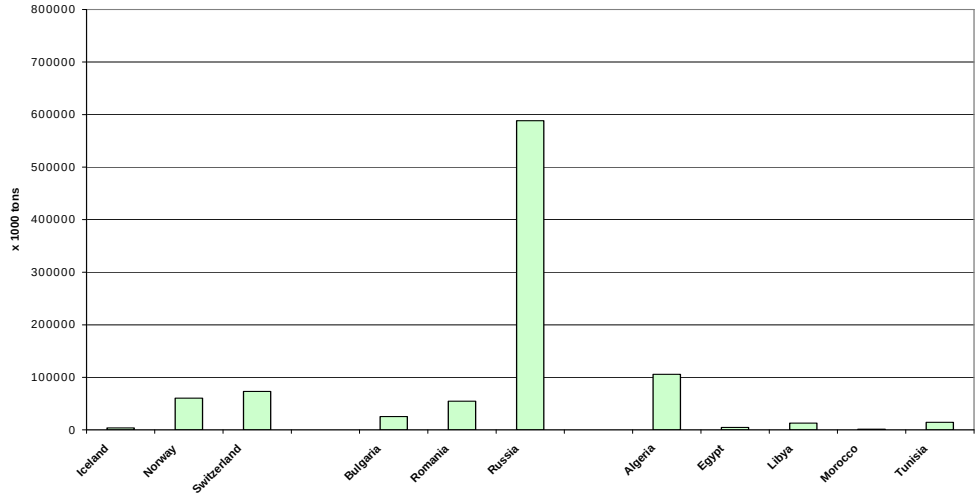
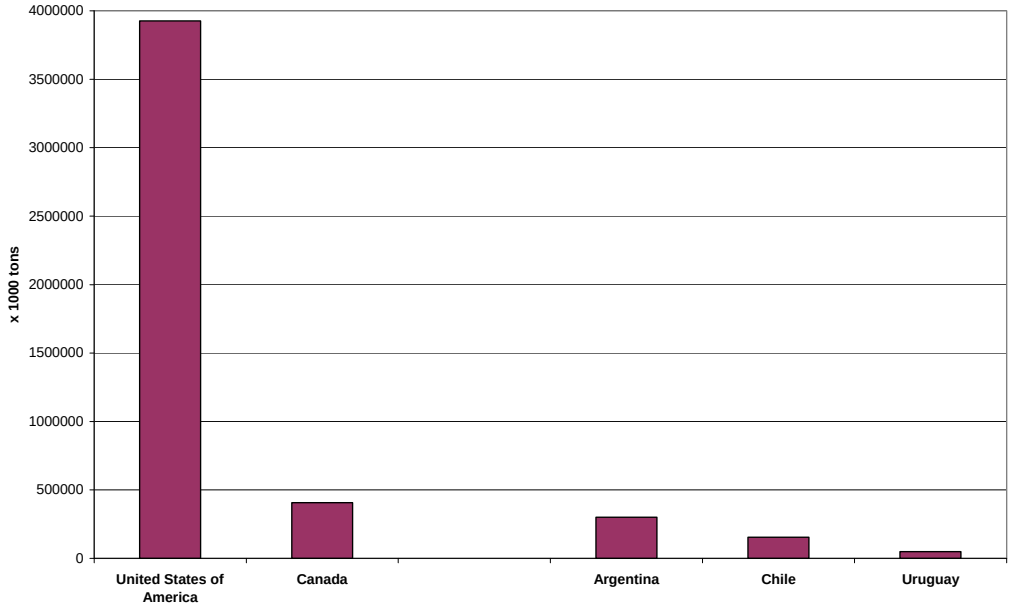


Figure 1.4c Non EU European importers, gross import (average 2000-2002)



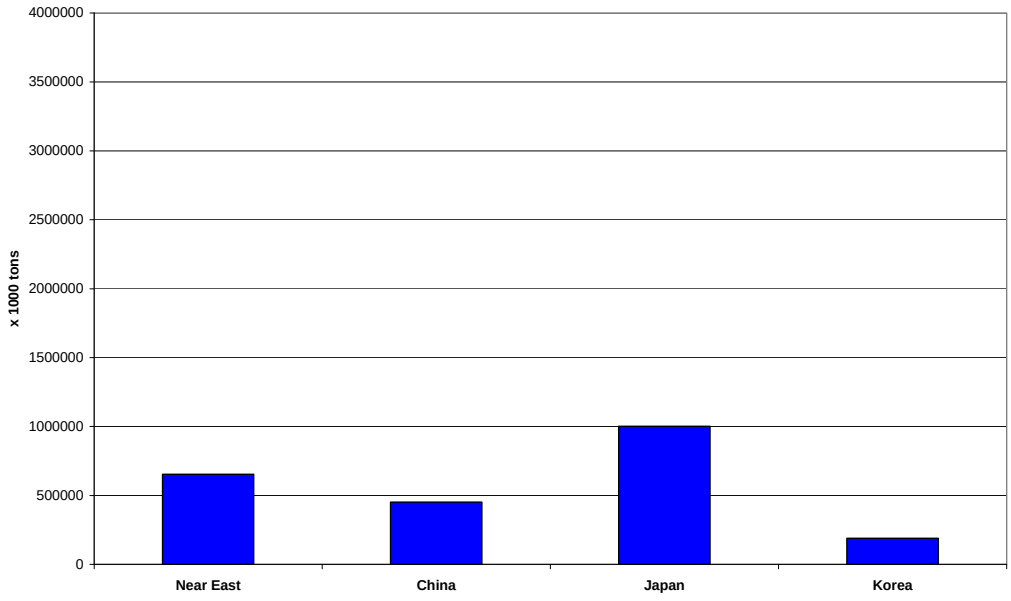
Source: FAO STAT data, 2004

Figure 1.4d North- and Latin American importers (average 2000-2002)



Source: FAO STAT data, 2004

Figure 1.4e Asian importers (average 2000-2002)



Source: FAO STAT data, 2004

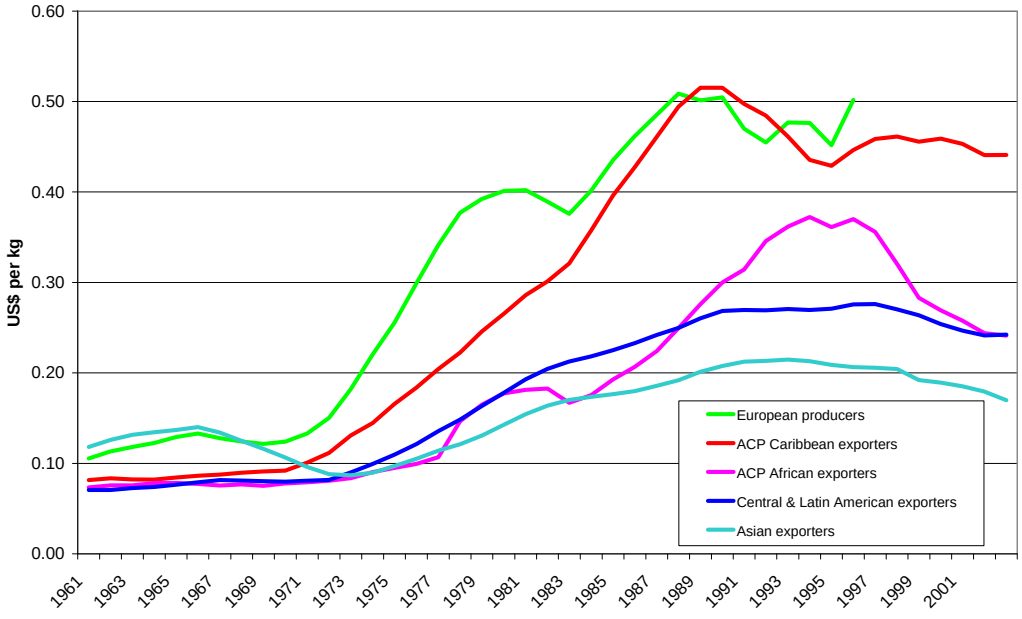
1.2 Export prices and import prices

There is no international market price of bananas that is widely recognized as the main international price of bananas. Unlike many other commodities there is no futures exchange in bananas, simply because bananas are perishable and hence non-storable, which prevents the existence of a banana futures contract. There is a tendency to look at the prices prevailing in non distorted markets and regard these prices as reasonable reflections of the balance

between supply and demand. A standard technique to identify prices if these are not published is to calculate export or import unit values, i.e. export in value (import in value) divided by export in quantity (import in quantity). If import and export data are available these data also allow identifying country specific price movements. Export unit values can be treated as equivalent to FOB prices and import unit values as CIF prices. Consequently export unit values may be regarded as marginal costs of banana producers to deliver bananas for export. In between export and import unit values we have transport costs and other transaction costs. In subsequent chapters we will argue that the difference between these two unit values is also influenced by import policies and we will explain in what way.

Figure 1.5 shows the export unit values of different export supply blocks, the blocks that we will identify throughout this study. Provided these calculated export unit values express the marginal cost of export supply the figure makes clear that these marginal costs are highest for ACP Caribbean exporters and European producers. Central and Latin American exporters have much lower marginal costs, while marginal costs of African ACP exporters oscillates around the export unit value of Central and Latin American exporters during most of the time, but approaches these in recent years. This evidence clearly suggests that the European and ACP Caribbean producers are the high cost producers in the banana market. Asian exporters, who a largely separated from the European and North American market by high transport costs, have the lowest marginal costs

Figure 1.5 Export unit values of major export supply blocks

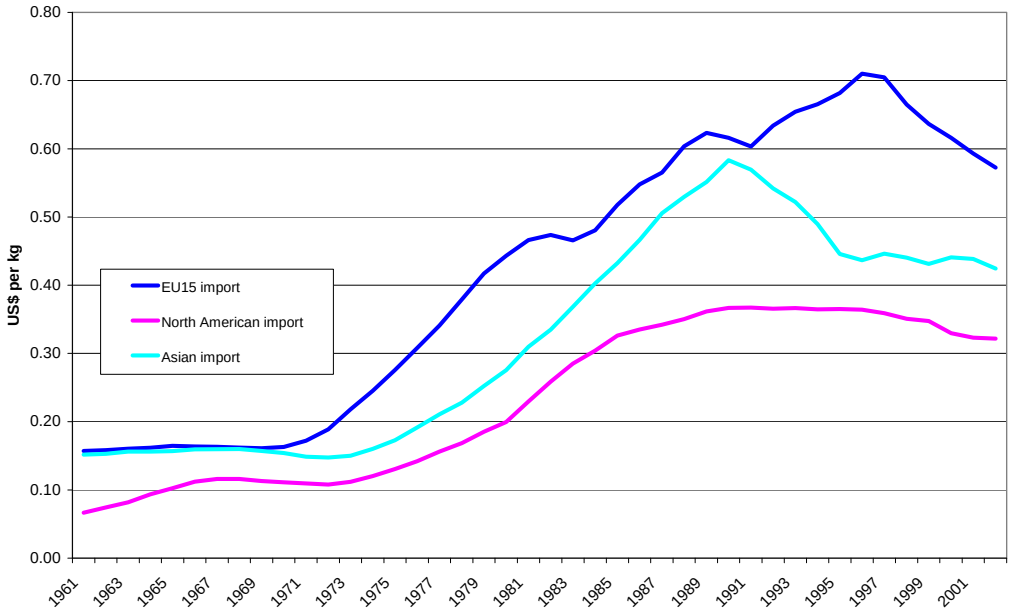


(weighted average of country data, centered average with a 5 year moving window)
Source: calculations on the basis of FAO STAT data, 2004

In a similar way as in Figure 1.5 we have plotted import unit values of different importing blocks over the years. These are shown in Figure 1.6. North American import unit values are, throughout the last 40 years, continuously below the import unit values of Europe – in this case the countries of the current European Union with 15 member countries – and Asia. At this stage it appears sufficient to remark that the difference between the import unit values of different blocks is far from constant, which would be the case in undistorted markets also with sufficient competition in transport: the lines in Figure 6 are not even approximately parallel. The Asian import unit values peak between 1985-1995, and afterwards appears to move parallel with North American import unit values. For comparative purposes we have presented Figure 5 and 6 also (respectively) relative to the Central and Latin American export

unit values (Appendix to Chapter 1, Figure A1) and relative to North American import unit value (Appendix to Chapter 1, Figure A2)

Figure 1.6 Import unit values of major import demand blocks

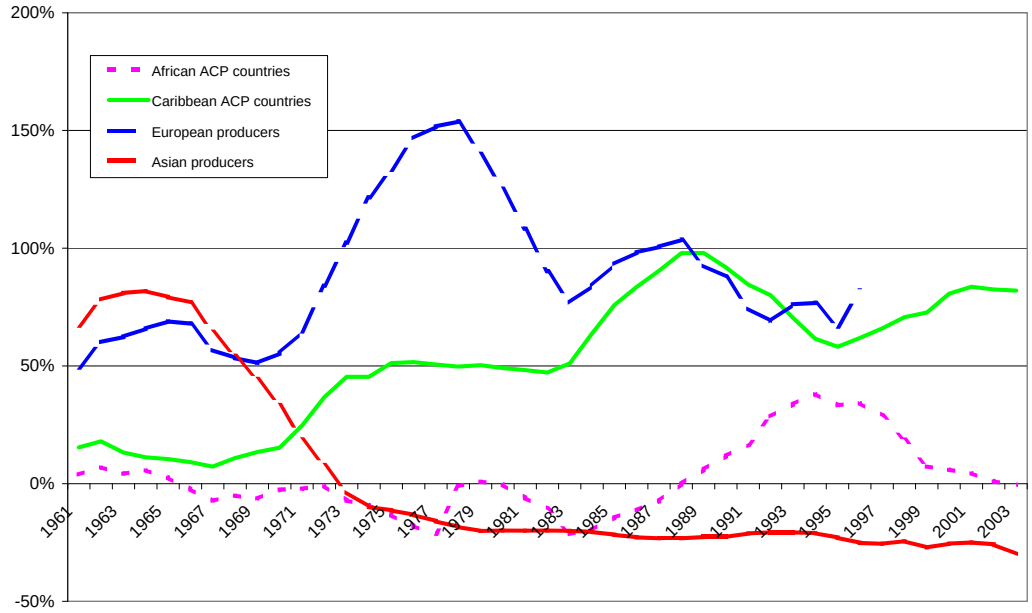


(weighted average of country data, centered average with a 5 year moving window)
Source: calculations on the basis of FAO STAT data, 2004

In the remainder of this study we will investigate the Chapter 2 the EU import policy, the current WTO regulation, the EU intentions and the position of Colombia. In Chapter 3 we will further investigate the methodology of tariff equivalent and the empirical basis for the an estimate of the quota rent. In Chapter 4 we will estimate supply and demand elasticities, investigate other important parameters in constructing a simulation model and formalise a partial equilibrium model. In Chapter 5 we present the simulations and discuss the various suggestions for a tariff in the 2006 tariff only system. Conclusions are drawn there.

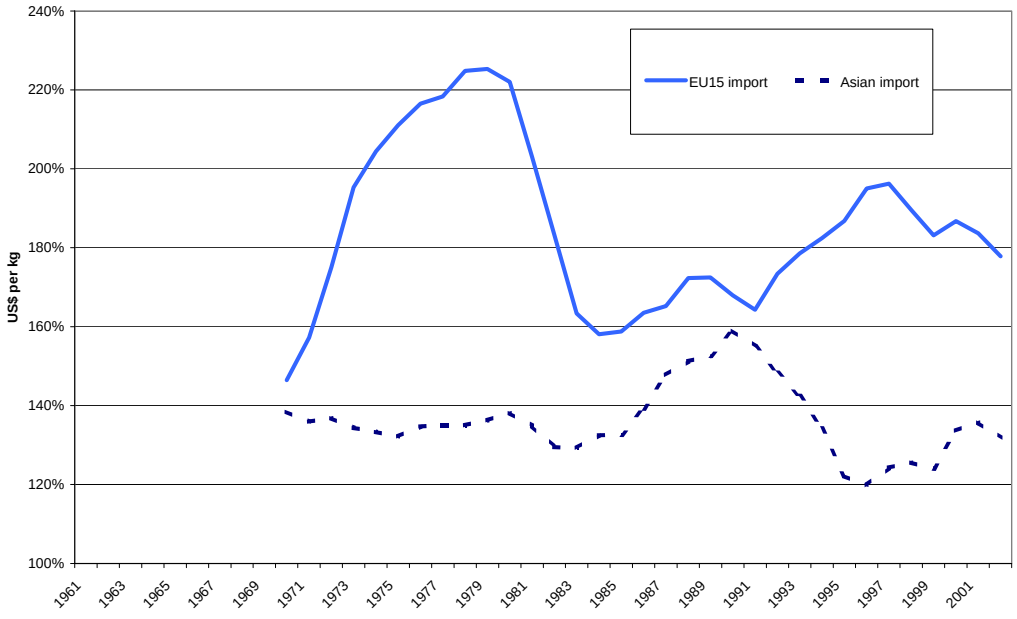
Appendix to Chapter 1

Figure A1 Export unit values of major export supply blocks relative to export unit values of Central & Latin America



(weighted average of country data, centered average with a 5 year moving window)
Source: calculations on the basis of FAO STAT data, 2004

Figure A2 Import unit values of major import demand blocks relative import unit values of North America



2. EU import policy of bananas

2.1 Introduction

As of 1st January 2006, a new regime in the European Union (EU) will be put in place regarding the imports of bananas into the EU. The new regime will be based on a tariff-only system, implying that the current system with tariff-rate quota will be abandoned. The new tariff will apply to all producing countries, but a tariff preference is to be given to ACP producing countries.
In implementing the new system the European Commission seeks "to maintain a level of preference to the ACP countries equivalent to that afforded by the enlarged Community of 25" (Council communication COM(2004) 399 final.).
This transitional period started in July 2001 and comprises a system in which 2.553 million tons (2.653 as of 2002) are permitted from any producing countries, subject to a tariff of €75 per ton in case imports come from non-ACP countries. After 1 May 2004, the quota for 2004 was increased by 0.3 million tonnes to cover import needs of the 10 new EU Members States. A quota of 0.85 million tons of bananas (0.75 as of 2002) can be imported without duty from ACP countries. In addition to these import quotas, a production of around 0.85 million tons is coming from EU territories that fall under special arrangements. Imports above quota are subject to tariffs of €680/ton for non-ACP countries and €300/ton for ACP countries. (Prevailing prices in the world market are around the €544 per ton FOB Hamburg, quoted for March 2004 (FAO).)

In this section we review the policies concerning imports of bananas into the EU in the past. We provide details of the actual policies in place, and investigate to what extent these policies have affected the prices facing the European importers. We start with the situation before 1993 in order to make clear how restrictive the EU policy was even before the introduction of the Common Market Organisation for Bananas.
We then list the measures taken in 1993, 1995, 1999 and 2002 and investigate if the changing restrictions have actually resulted in different distribution over exporting countries. If so, abolishing the quota might have an effect on the prices beyond the traditional effect of lifting a restriction on total supply.
After this, we sketch the changes envisaged for the EU banana market regime, we provide the texts concerning GATT article XXVIII that suggest which approach to take. The Appendices provide the full texts, taken from WTO and other sources, including the "Procedures for Negotiations under Article XXVIII".

2.2 Overview of EU Banana policies and their effects

The EU regime before 1993

It is important to look at the regime before 1 July 1993 in order to assess to what extent the imports of bananas were restricted at that time. Knowledge of this helps understand a possible cause for changes in the prices before and after the introduction of the Common Market Organisation.

In a review given by Badinger (2001) the following information is given on the pre-CMO regimes.

- **Austria, Finland, Germany and Sweden** did not apply any quantitative or tariff restrictions. Only Germany, of course, was member of the EU in 1993.
- **Belgium, Luxembourg, the Netherlands, Denmark and Ireland** applied a tariff only system with 20% import tariff, but with free access for ACP and EU bananas.
- **Italy** had a quota system in place for non-ACP bananas; quota were adjusted regularly to meet consumption demand. Market share of ACP bananas was 8% in 1992.
- The **U.K**. had a similar system (with adjustable quota) in place, but its ACP focus was on the Caribbean producers. Market share of ACP bananas was no less than 64.7% in 1992.
- The Other EU Member states, Spain, France, Portugal and Greece had and have substantial production of bananas.
    - In **France** this covered two third of the market, with the remainder allocated to African ACP producers. Allocation to individual countries was proportional: 44% for Martinique, 22% for Guadeloupe, 33% for Côte d'Ivoire and Cameroon together. There were hardly any additional imports permitted.
    - **Spain** had its market entirely reserved for bananas coming from the Canary Islands.
    - **Portugal** had a special quota reserved for bananas coming from Madeira, but its market share was only small.
    - **Greece** had high tariffs imposed on imports of bananas in order to protect its own producers. Nevertheless, by 1992, almost all bananas came from Latin America.

In 1992, therefore, a free market existed only in the North Western countries, barring the UK. Their share of EU consumption at that time was approximately 45%, and – given the dominant position of Germany – subject to an average tariff of 1.5% only.
Other EU imports were basically restricted and higher prices would normally prevail in France, Spain and the UK an Italy than would otherwise have been the case. If we would want to express this as an EU-15 quota, we might take this to be equal to what the 'free market' countries imported plus the consumption in the rest of EU15. This virtual quota would come at around 3.7 million tonnes.

Table 2.1 EU15 gross imports in 1992

Thousand tons	Tariff/quota	Imports	ACP	EU	non-ACP
Germany	0%	1379	3	0	1376
Benelux, Ireland, Denmark	20%	300	7	0	293
UK, Italy, Greece, Portugal	Flex quota	1474	373	67	1034
France, Spain*	Strict quota	510	189	321	0
Total imports		**3663**	**573**	**388**	**2702**

*Shipments from Canary Islands to Spain were not counted as imports.
Source Badinger(2001)

By 1 July 1993, therefore, around 45% of EU imports faced a free market and price formation, while the rest was subject to quantitative restrictions. These restrictions favoured some imports, notably from ACP countries, and hindered other imports, notably from Latin America.

Transition to the CMOB

How did all this change with the introduction of the Common Market Organisation for bananas? Imports from ACP countries were still free to enter into the whole of the EU without tariffs, although limited to a maximum of 857.7 thousand tonnes for traditional ACP countries and 90 thousand for non-traditional ACP countries. Imports from non-ACP countries were restricted by a quota of 2 million tonnes minus the 90 thousand for non-traditional ACP. EU production was supported by deficiency payments up to a maximum of 854 thousand tonnes.

Total quota plus EU production amounted therefore to 3.7 million tonnes, *i.e.* some 10% below the consumption in the EU in 1992 (estimated at 4.1 million).

In addition, for imports from the other countries a tariff of €100 per tonne had to be paid. At the ruling import (CIF) price of 1992, equal to ($520/ton=) around €420/ton, this €100 amounted to some 24% and even higher when we take the green ECU into account.

Hence, in the erstwhile free countries, the new tariff had an upward pressure on the prices, even where the tariff was 20%. The upward pressure was reinforced by the restricted supply resulting from the new quota. In the other countries, however, such as France and the UK, the new regime led actually to larger imports of bananas and from a wider supply base and even had a downward effect on the prices.

Table 2.2 Retail prices in selected countries US$/kg

	1990	1991	1992	1993	1994
USA	1.020	1.060	1.010	0.980	1.020
Germany	1.680	1.550	1.430	1.530	1.920
France	2.090	2.200	2.330	1.980	2.030
UK	2.040	2.100	1.870	1.510	1.520

Source: FAO, Banana Statistics CCP:BA TF 01/2

On a monthly basis, prices change rather abruptly with the introduction of the new regime. Figure 2.1 shows this for the month of introduction, July 2003, when wholesale prices in France fell by even more than prices in Germany rose.

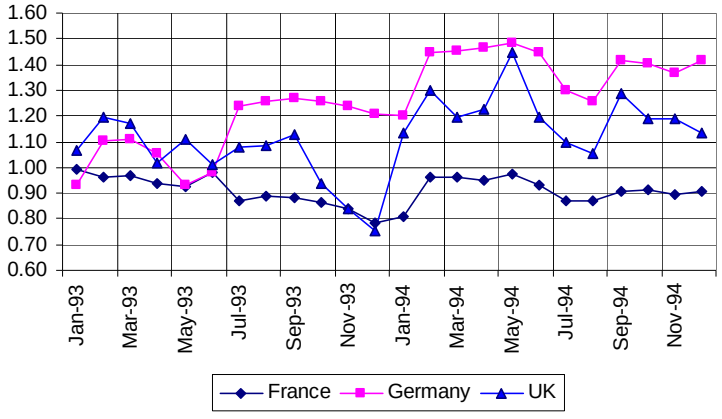


Figure 2.1 Retail prices in France, Germany and wholesale prices in the UK, 1993-1994 relative to their mean values of 1992

The introduction of the Common Market Organisation has led, therefore, to diverging results for the various EU countries. Clear effects for the EU-12 or, for that matter, the EU-15 (established in 1995 with the accession of Austria, Finland and Sweden) cannot be established without entering into detailed country analysis. This would lead us too far from the analysis of the present situation. The events after 1993 show however that the EU as a whole may

show quite different results than individual countries, and that 'a law of one price' does only approximately and in the longer run hold true for the EU banana market.

Changes in later years

The original quota of 2 million tonnes for non-traditional ACP imports was enlarged to 2.2 million tons in 1994, while another quota of 0.353 million tons was added in 1995 to account for the then new member states Austria, Sweden and Finland. As of 1 January 1995, in the Framework Agreement, specific quotas were allocated to Colombia, Costa Rica, Nicaragua and Venezuela, together amounting to 49.2% of the dollar-bananas quota. The tariff on dollar bananas was reduced from €100 per ton to €75 per ton. Colombia's share in EU imports was set at 21% of the 2.2 million tons.

An extra quota was allocated to non-traditional exporters: Côte d'Ivoire and Cameroon each received 7.5 thousand ton, Belize 15 thousand tons and Dominican Republic 55 thousand tons, while 5 000 tons were open to other non-traditional exporters.

1999

The regime was changed again, effective from 1 January 1999. Traditional ACP quota were maintained, but without country allocation. A quota of 2,553 thousand tonnes was allocated to non-traditional ACP and non-ACP countries. Within the quota a country allocation was made:

Ecuador	26.27%
Costa Rica	25.61%
Colombia	23.03%
Panama	15.76%

The remaining 9.43% (240 278 tonnes) is allocated to non-traditional ACP bananas (EU Court of Auditors, 2002). Probably, other dollar exporters (Nicaragua, Venezuela etc.) fell in this category too. Tariffs were maintained at €75 per ton for dollar bananas.

2002

A further change became effective on 1 January 2002. The country allocation to dollar banana exporting countries and the non-traditional ACP allocation were abolished. The quota was raised from 2,553 thousand tons to 2,653 thousand. The traditional ACP quota was reduced by the same amount to 750 thousand tons. In addition, the imports from Dominican Republic were considered as within the ACP quota in stead of in the non-traditional ACP group that was within the third country quota (Smith, 2002). Dominican Republic had a quota of 55 thousand tonnes under the regime of 1995 (EU Court of Auditors, 2002), but exported close to 100 thousand tons to the EU by 2002. Thus the scope for exports from the dollar zone improved considerably.

Licenses

Any system with quotas implies that licences should be given to some importers, who may then benefit from the possibility of selling in a market where supply is restricted.

The initial system allocated 66.5% of the import licenses to traditional operators of bananas from non-traditional ACP and other countries, and 30% to operators of EU and ACP bananas, distributed within these groups over importers (57%), traders (15%) and ripeners (28%). The latter allocation of 30% was much higher than the actual share of ACP imports into the EU, which was 15% in 1992. This gave rise to trade in licences from ACP-operators to dollar-zone operators. It should have contributed as well to the decrease in retail prices in France and the UK, the traditional markets for these operators. In 1999, the allocation system was changed and 92% of the licences were allocated to traditional operators based on their shares in the market between 1994-1996 (with some ad hoc adjustments for firms that suffered from the hurricanes in Central America). For new comers 8% was reserved.

The system is presently based on historical performance of importing firms since 1st January 2002. The allotment of the licences in 2002 for the non-ACP quota was made to traditional

operators (83%) and non-traditional operators (17%). For the traditional operators it was based on their performance in 1994-1996 as registered in 1998.

Effects of quota changes on average FOB prices

The changes over time in the quota allocated to the cheaper suppliers from Latin America, and the changes in the allocation within this group, may have had influences on the prices facing the EU importers. We turn now to an investigation of this effect.

Source of data for the imports into the EU is a European Commission publication (IO 04/707) of 20 April 2004. The table is in the appendix C.

The approach taken is to combine the FOB prices for the countries in each group, calculate the weighted average of these FOB prices and show what effects changes in the regime may have had on the average FOB price facing European importers. The calculations show that when the country allocation of the quota within the ACP group would have remained fixed at their 1993 levels, higher prices for the group would have resulted. That is, the changes in country quota or freedom in their allocation enabled low costs producers to sell more.

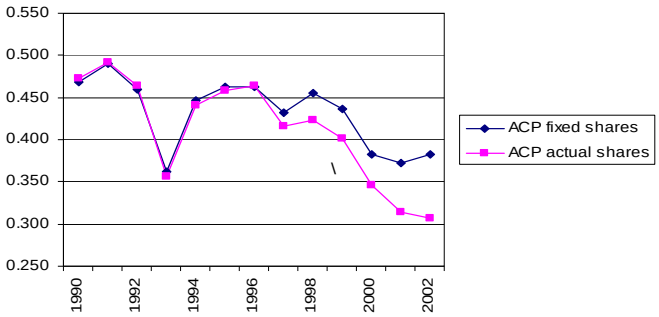


Figure 2.2 FOB prices ACP countries (US$/kg), weighted by import shares into EU15

Within the Latin American group, differences are very small: had the country allocation of 1999 to the major exporters (approx. 90% of non-ACP imports) prevailed throughout the period, the resulting average FOB price would not be different. The implication is that the country quotas (first to Costa Rica, Colombia, Venezuela and Nicaragua; and later to Ecuador, Colombia, Costa Rica and Panama) have not had significant influence on the FOB prices.

Finally, we look at the distribution over the major groups of ACP and non-ACP countries. If the 1995 weights had been maintained, prices would have been slightly higher (less than one dollar-cent per kg) than they actually were. Hence the changes in weights led to a reduction of the costs of bananas for the EU. As is clear from the two graphs, dollar bananas consistently show lower FOB prices, so that higher relative quotas for dollar bananas would lead to more cost savings.

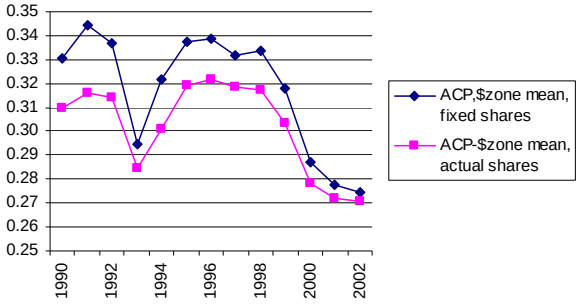


Figure 2.3 FOB prices (US$/kg) EU suppliers, weighted by import shares of ACP and dollar Zone

As Figure 2.3 shows, the actual mean prices in 2003 are not much different from the prices using weights of 1993, in spite of the larger quota assigned to dollar zone bananas. The reason is the decrease in FOB-prices of ACP countries, notably in Cameroon and Côte d'Ivoire. The closer ACP FOB-prices are to dollar-zone prices, the less important restrictions are.

The conclusion of the above calculations and graphs is that the changes that have occurred over the past years have not lead to significant changes in the relative positions of the major non-ACP suppliers. Within the ACP group, Côte d'Ivoire, Cameroon and Dominican Republic have increased their shares of the market, which benefited from their low FOB prices.

2.3 The EU proposal for 2006 and the GATT

We now turn to the present situation and consider the case of the change in the EU tariff quota, envisaged for 2006. On the one hand, it implies the transformation of a quota into a tariff, which begs the question of the tariff equivalent of the quota. This was a major concern in the era of the Uruguay Round and many publication provide guidelines on how this should be done, including an authoritative publication by the OECD, written by Deardorf and Stern (1997). On the other hand, the change in 2006 entails a change in a bound tariff, which requires negotiations with the parties concerned under article XXVIII of the GATT. The latter is what is important, but we shall see that the relevant calculations will include the former aspect of a tariff equivalent.

On 11 April 2001, after lengthy negotiations, the EU reached an agreement with the USA and Ecuador about the steps to be taken in regard of the banana market organisation. Quoting from a European Commission communication (COM (2002) 763)

> According to Council Regulation (EC) No 216/2001 the EU will remove the tariff quota structure and introduce a "tariff only" regime for banana imports no later than 1 January 2006. The level of the tariff has not as yet been determined but will be discussed in the WTO under GATT Article XXVIII. The EU obtained two waivers in the WTO to cover these arrangements. The first covers the tariff preference for imports of bananas as well as other products from the ACP under the Cotonou Agreement until 2008. The second covers the reservation of quota C for the ACP countries only between 2002 and end 2005. Under the future "tariff only" regime, the ACP countries will continue to benefit from a tariff preference.

Thus, the EU envisages discussions with the parties concerned under GATT article XXVIII, whilst taking two WTO waivers into account, one relating to the tariff preference for ACP countries, and one relating to the quota for ACP producers.

The proposal of a tariff-only system came after other proposals had been envisaged, including a system with even more quotas and a mixed system, in which the present non-ACP quota would be maintained, but no quota would be set for the ACP countries. In an internal EU proposal, discussed in the EU Special Committee on Agriculture, 7 and 8 June 1999, the Commission suggested that a tariff of €275/t be considered, consisting of €200/t for the licence and €75/t for the present tariff.

The text of Article XXVIII is given in the Appendix A, inclusive of the interpretation, as provided by the WTO web site. Appendix B provides the text of the "Procedures for Negotiations under Article XXVIII".

There are no rules governing what compensation may be negotiated between the parties. The initiating party, the EU is this case, should circulate statistical evidence on the imports by country of origin for the most recent three years, and preferably in quantities and values. This will determine the position of affected countries as having a 'principal supplying interest' or 'substantial supplying interest'. Paragraph 2 of the article states

> 2. In such negotiations and agreement, which may include provision for compensatory adjustment with respect to other products, the contracting parties concerned shall endeavour to maintain a general level of reciprocal and mutually advantageous concessions not less favourable to trade than that provided for in this Agreement prior to such negotiations.

The aim of the negotiations should therefore be to have a trade relationship that is at least as good as before the negotiations.

In the commentary article XXVIII*bis*, the Agreement mentions

> 3. Negotiations shall be conducted on a basis which affords adequate opportunity to take into account:
>
> *(a)* the needs of individual contracting parties and individual industries;
>
> *(b)* the needs of less-developed countries for a more flexible use of tariff protection to assist their economic development and the special needs of these countries to maintain tariffs for revenue purposes; and
>
> *(c)* all other relevant circumstances, including the fiscal, developmental, strategic and other needs of the contracting parties concerned.

This brings into focus, apart from the needs of countries and industries, the issue of fiscal needs and revenues generated by the tariff.

It appears therefore that important information for the negotiations should include the revenues for the EU that are generated by the present and new tariff schedule, while the supplying countries should provide evidence on the fiscal, developmental and strategic role of the employment and revenues generated by the production of the bananas.

Although not applicable in this case, it is interesting to se what is said in case a quota is replacing a tariff and suggests that compensation should be based on an estimate of the trade forgone. The text is

> 6. When an unlimited tariff concession is replaced by a tariff rate quota, the amount of compensation provided should exceed the amount of the trade actually affected by the modification of the concession. The basis for the calculation of compensation should be the amount by which future trade prospects exceed the level of the quota. It is understood that the calculation of future trade prospects should be based on the greater of:
>
> (a) the average annual trade in the most recent representative three-year period, increased by the average annual growth rate of imports in that same period, or by 10 per cent, whichever is the greater; or

(b) trade in the most recent year increased by 10 per cent.

In no case shall a Member's liability for compensation exceed that which would be entailed by complete withdrawal of the concession.

This suggests that the compensation might be based on the estimated future trade that could have taken place had the trade measure (in the above case a quota) not been taken. If the EU, in the present case, were to consider a higher tariff to be imposed on non-ACP countries than what would be commensurate with the present tariff-quota, this would typically diminish prospects for future trade of these countries. This reduction of trade might then serve as a basis for compensation similar to what is indicated in paragraph 6 of the Understanding above.

3. Methodology of calculating the compensation

In its move to change the CMOB from a system with tariff quota to a system with tariffs only, the EU actually opens up the market and – in principle – links the price within the EU to the world market price in the outside market. Though prices may be linked, there is a gap between the two prices, within and outside the EU, equal to the new tariff.
At present (and again in principle), the price formation within the EU follows its own 'laws', and prices are such that demand for bananas within the EU equals supply, where supply is restrained by the quota and the levels of production within the EU. The 'within-price' is thereby de-linked from the world market price. Producing countries are affected by the quota, which reduces their trade. How high the prices within the European Union are is actually of minor importance for the producing countries, unless these prices have an effect on the prices paid to them.
In this chapter we provide the theoretical considerations for determining the tariff equivalent of the quota. We distinguish between a 'small country' situation and, more appropriately, the case in which the changes in the EU have an effect on the world market.
We proceed by looking into the adequate definition of the price. Should these be based on retail or wholesale prices in the EU, or CIF prices, or FOB prices? Do these prices accurately reflect the effect of tariff-quota or are they higher than could be expected on the basis of quota alone? We show how exchange rates influence these prices and conclude that the quota rents themselves are also sensitive to this exchange rate.
We draw conclusions for the comparisons that should provide a fair idea of the tariff equivalents and the compensation under GATT regulation.

3.1 Quotas and tariff equivalents for a 'small' importer

We start from a situation with two suppliers, ACP and LA. Later we shall look at individual countries within these groups. We shall first look at how the change from tariff-quota to tariff-only will affect the two suppliers. We shall then, in section 3.2, investigate the effects the change may have on the world market prices, and – after a discussion of price transmission in section 3.3 – focus on the implications for an individual producing country, Colombia.

At present, October 2004, the supply of bananas to the EU comes from three sources:
- LA: a quota of 2 954 thousand tons, including the 300 thousand tons for the Accession Countries. A tariff of €75/ton applies.
- ACP: 750 thousand tonnes. No tariff.
- EU itself, where producers are supported up to a maximum of 854 thousand tons.

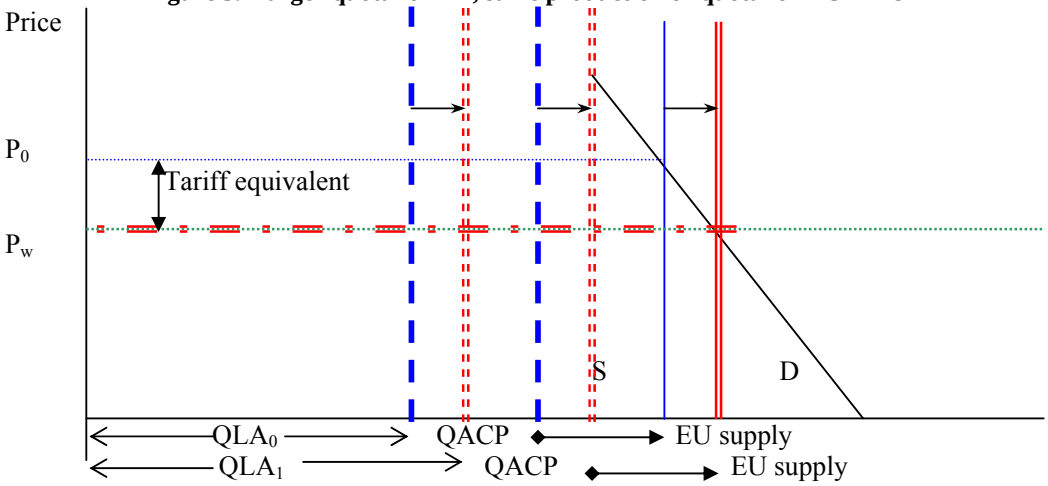
For the analysis to be based on observed data referring to EU15, we take the position in 2003. At that time, the extra quota for the EU10 was not yet added. The quotas were:
- LA: a quota of 2 654 thousand tons with a tariff of €75/ton. Over-quota imports face a tariff of €680/ton.
- ACP: 750 thousand tonnes. No tariff for ACP origin. Over-quota imports from ACP origin face a tariff of €380/ton.
- EU itself, where producers are supported up to a maximum of 854 thousand tons.

The use of the quota for dollar bananas was around 100% in the last years, and the use of the ACP quota actually was 105% in 2003, but below 100% in the years before. Note that non-traditional ACP countries, in particular Dominican Republic is included since 2002.
We may reasonably assume therefore that the two quotas are filled, and that hardly any over-quota imports occur. The balance of EU supply comes from the EU producers, who have always produced somewhat less (roughly 10% less) than the maximum that can be supported.
The size of the price change following the change in supply is dictated by the sensitivity of demand for the price, and the sensitivity of EU supply for the current price. This latter

sensitivity, however, depends on how the price changes are reflected in the price facing the producers. The current transmission of market prices to the support prices to the farmers is very weak, and actually non-existent, as the support prices are based on a deficiency payment system with a reference price that is higher than the current market price. EU producers have a support price equal to approximately €630/tonne, which is considerably higher than the prices prevailing in the market (EU Court of Editors, 2002, para 28).
The data are in Appendix D.
The supply and demand schedules are therefore composed as follows:

The impact on the price of any change in the quota, therefore, comes through the sensitivity of demand only.
The next Figure 3.1 shows the world market price (provisionally kept fixed), adds the tariffs to be paid and increases the quota to see what happens if they are no longer binding.

Figure 3.1 larger quota for LA, same production or quota for ACP+EU



In this Figure, we have increased the quota of LA and kept the ACP quota (or ACP production) fixed. The point where the quota is no longer binding coincides with the supply-demand equilibrium within the EU at the level of the world market price P_w. To return to the old situation indicated by P_0, a tariff equal to the distance between P_0 and P_w is sufficient (still assuming fixed supply from ACP and EU). This then would be the tariff equivalent of the quota for the non-ACP countries.

The assumption, underlying Figure 3.1 is that supply to the EU at the level of the world market price or above is unlimited. This assumption is maintained still for LA, but we now take supply responses within the ACP group into account. Increasing its quota will not lead to immediate increases in the supply, as is supply is sensitive to prices.

Figure 3.2: quota for LA, no quota for ACP

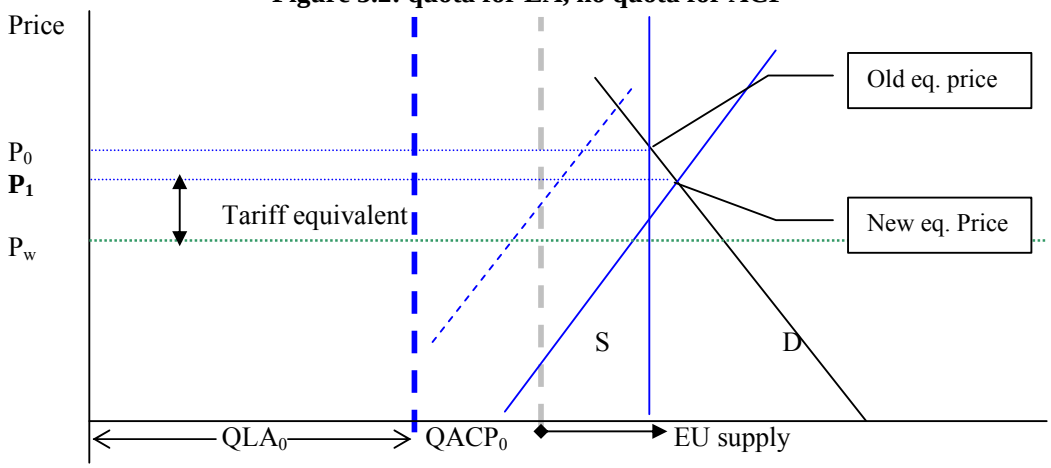


Figure 3.2 shows what happens, if QLA is maintained but QACP is abolished. Supply to the EU now results from the price-sensitive supply from ACP that is added to the (fixed) supply from LA and EU. As the ACP at the current prices would produce more than its present quota (i.e. the quota is binding), the equilibrium price in the EU will fall somewhat, as shown by the intersection of the supply and demand curve at a point P_1 below the level of P_0. Within the ACP group, the additional supply is likely to come from the African countries (Côte d'Ivoire and Cameroon in particular) and from the Dominican Republic and Belize.
If the quota for LA were replaced by a tariff, the tariff should equal the difference between P_1 and P_0. In this situation, however, supplies from the ACP might have increased relative to LA. As drawn in Figure 3.2, ACP supply at the lower price exceeds its original quota-restricted supply, but this depends on the supply elasticity. If ACP supply were more sensitive, a lower tariff for LA would restore the original market shares for the two blocks.

3.2 World market impact

Total EU-15 imports of around 3.2 million tons account for 27% of the world imports (FAO, 2002, p. 10). Changes in EU import policy which affect EU import demand may have considerable effect on the world market price and hence on the supply from the major producing countries.

The relevant (approximate) figures for the dollar zone market are:
- LA exports: 9.5 million tons
- USA imports: 4 million tons
- EU-15 imports: 2.5 million tons
- RoW imports from LA: 3 million tons

An increase in import quota into the EU by 100 thousand tons, for example, would affect world market prices. It would typically shift the demand function by the increase in quota and the new equilibrium price would depend on the supply elasticity of LA and the demand elasticities in USA and elsewhere.

The relevant formula is

$$d\ln p = \frac{dQ/D}{\varepsilon_{LA} + s_{US}\varepsilon_{US} + s_R\varepsilon_R}$$

Here p stands for the dollar-zone price and $d\ln p$ for its relative change, dQ for the shift in EU quota, D for total LA supply (which equals total LA demand) and s_{US} and s_R are the shares of the USA and the Rest of the World in this demand. The ε's indicate the elasticities of LA supply, US demand and Rest of the World demand.

Taking as elasticities for LA supply 0.4, for US demand 0.3 and for RoW demand 0.3, the expression looks as follows:

$$d\ln p = \frac{\frac{0.1}{9.5}}{0.4 + \frac{4}{9.5}0.3 + \frac{3}{9.5}0.3} = 0.017$$

That is, an increase in demand of 0.1 million tons or just over 1% of total LA supply would lead to an increase in the dollar-zone prices of 1.7%.

The formula can also be used to indicate the effects of changes in a tariff. Suppose that the EU quota are replaced by a tariff, and that this tariff is equivalent to the quota, so that the same demand for LA bananas would result, and the same world market price for dollar bananas would prevail. Then, what would be the effect of a change in this tariff on the world market price?
The answer can be obtained by translating the tariff change into an EU-demand change and then applying the above formula. To transform the tariff change into a demand change, we employ an EU demand elasticity of -0.5.
For a given change in the tariff, the following formula may be instructive. We used the relationship for the EU price to be equal to the world market price times $(1+t)$, where t is the tariff. For a relative change in this tariff $d\ln(1+t)$, it holds that

$$d\ln p = \frac{\varepsilon_{EU}\, d\ln(1+t)}{\varepsilon_{LA} + s_{EU}\varepsilon_{EU} + s_{US}\varepsilon_{US} + s_R\varepsilon_R}$$

At present this tariff is €75 per ton, with a value of around €650, or a tariff of about 11.5%. Suppose this would be reduced by €7.5, so that the tariff-factor $(1+t)$ would fall by 1%. The effect then would be for world market price to rise 0.7%, and the EU-prices would eventually go down by only 0.3%.

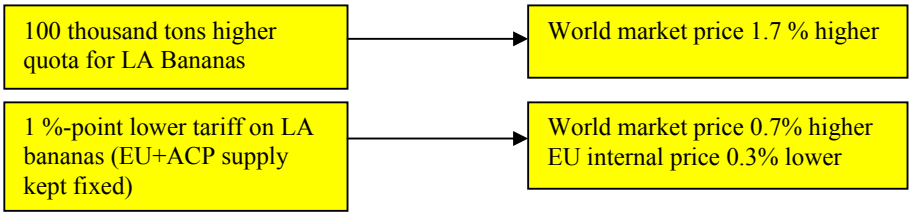


Chart 3.1 Preliminary estimates of price impact of EU policy

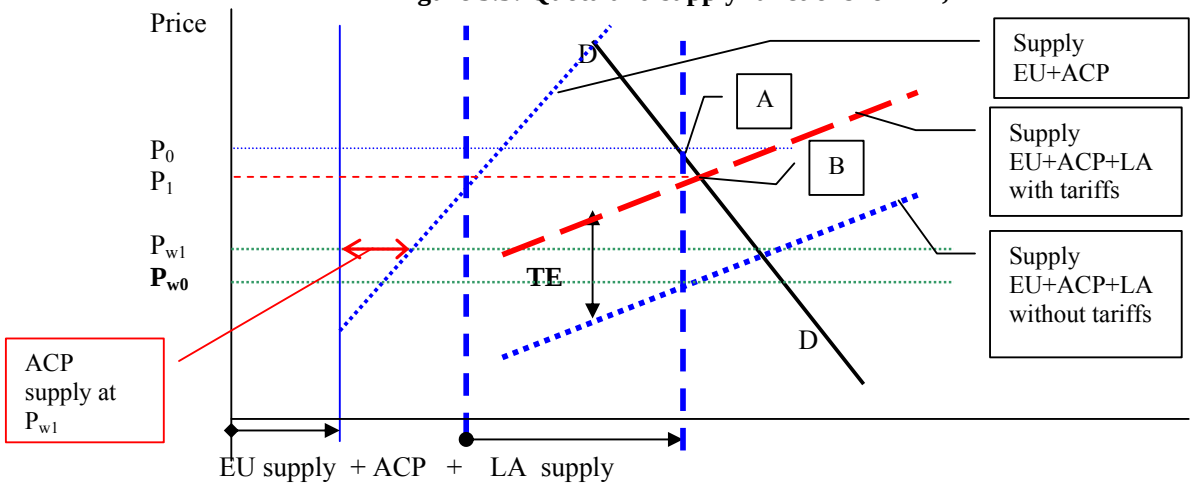
These changes in world market prices are therefore not negligible and should be taken into account when considering the consequences of a change of the Common Market Organisation for Bananas (CMOB).

Effects of changes in tariff and/or quota when LA supply responds

Taking into account such changes in the world market price requires the inclusion of the net supply function of bananas from LA to the EU. This supply can be seen as the total production of LA minus demand from USA minus other demand. Obviously, its sensitivity to prices depends on the supply and demand elasticities in these regions. With the elasticities that we have taken into account above, the elasticity by which net supply to the EU responds to price changes is approximately 3. It is so high because an increase in price not only increases supply, but also decreases demand in the other regions.

The graphical representation now changes as supply functions are drawn into the picture.

Figure 3.3: Quota and supply functions for LA,



In Figure 3.3 point A indicates the original equilibrium in the EU market. Supply by EU producers is fixed by the higher-than-the-market price offered to them, and supply from ACP and LA countries by the quota. Prices prevailing in the EU market are equal to P_0. In order to keep net supply from LA to EU at the quota-restricted volume, prices in the world market should be P_{w0}, which can be obtained graphically by moving down from point A until the supply function including LA, is met.
If, in this graph, the quota for LA were enlarged, an equilibrium price within the EU can be reached to the right of point A, where more supply from LA reaches the EU. In response the world market price would rise.
When the quota would be lifted altogether, the intersection of the demand curve DD and the supply curve would determine EU and world market price. In this case the price would be P_{w1}.
At this price P_{w1}, without further tariffs, supply from ACP would be only equal to the size of the double arrow, as shown in the graph, while supply from LA would be the distance from this arrow to the supply function. In order to maintain the original protection offered to the ACP countries, supply from LA can be discouraged by imposing a tariff on their imports into the EU. The graph shows the new equilibrium as point B. This point combines supply from ACP and LA in approximately the same proportions as before (as drawn, both increase a bit). The tariff that leads to this equilibrium is shown as the distance between the two parallel supply curves, **TE**.

The new equilibrium is reached at an EU price somewhat below the original P_0, supplies from LA and from ACP increase slightly, while the world market price P_w, though a bit higher than the original P_{w0}, will remain below the tariff-free-market price of P_{w1}.

Conclusion

The conclusion from the theoretical exercise is that the classical tariff equivalent of the quota may be misleading. If supply of ACP and EU were kept fixed, the tariff equivalent of the present quota on LA supply to the EU market would apply. As ACP supplies are currently effectively bound by the C-quota in the CMOB, the actual tariff equivalent must be less.

The change towards a quota-free system implies that not only the quota on LA supplies is lifted, but also that of ACP supplies.

The proper way to address the issue of a tariff equivalent is to first construct what the impacts are of abolishing the ACP tariff, and then to calculate what remains as a tariff equivalent for LA imports. The relevant approach is therefore as indicated by Figure 3.2 and 3.3.

3.3 What price to take?

An important question is what price to take. While the theoretical model employs a 'European price' and a 'world market price', and assumes these to be closely linked in the way as shown above, the actual world knows many prices. Statistically speaking, the main sources of information are the export and import unit values relating to trade flows. Changes in the one are not automatically transmitted to the other (see Chapter 4), nor are changes in unit import values completely reflected in wholesale prices or retail prices. Yet, these latter prices determine demand sensitivity, which co-determines the level of tariff equivalent to the quota. And the unit import values are likely to be taken as important yardsticks for the calculation of the interest that producers have in changes of the EU import regime and in calculating any compensation.

Of particular importance is how the transmission of such changes in prices anywhere in the supply chain of bananas is by itself influenced by the regime. Has the system of licenses, given to operators, led to oligopolistic structures in the market that pushed up the European prices more than can be explained by the tariff-quota itself?

As mentioned in Chapter 2, the picture is not the same within Europe. While in France and the UK, prices fell after the CMOB took off, those in Germany rose. The initial direction of change is obviously the result of their earlier positions. The change took quite some time, however. For the EU at large, the mere fact that supply is constrained should lead to higher prices.

We will address two questions in this section. The first question is whether prices, notably retail prices, have gone up by more than could be explained by the supply restriction and import prices with additional tariffs alone. If so, this may point towards less than normal competition, which may, however, not survive the change envisaged in 2006. The second question is how the higher internal EU prices might be reflected in higher import prices and in higher prices for the exporters and producers in the protected region, the ACP producers.

As to the first question of higher than normal price rises in the EU, Figure 2.1 showed that after the introduction of the CMOB, retail prices in France and to some extent in the UK actually fell, while those in Germany rose. To assess the latter rise in prices Figure 3.5 presents a longer time series of retail prices, for EU countries and for the USA. Data were taken from the FAO Banana Statistics.

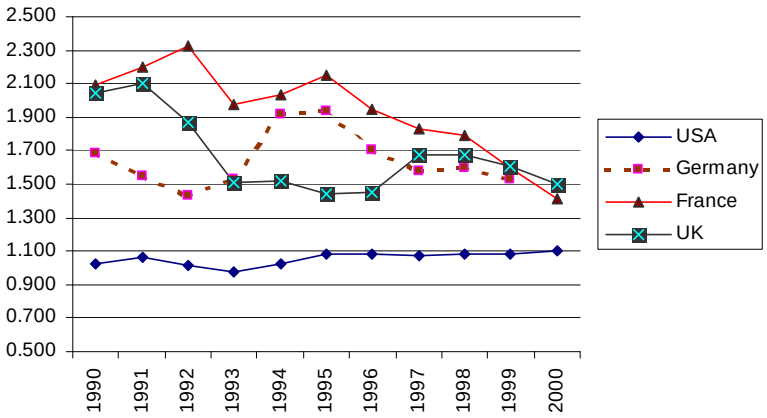


Figure 3.5 Retail prices ($/kg) in various countries

The Figure 3.5 makes clear that, though some prices, especially in Germany, have gone up after the introduction of the CMOB, there is tendency for the retail prices in the EU to converge to one another and to come down to the level of retail prices in the USA. An important factor underlying the movements of the EU prices have been the exchange rates of the Euro-currencies vis-à-vis the US dollar. To explain this effect, we return to the formula used above for the impact of an EU demand change on the world market prices.
The formula was

$$d\ln p = \frac{dQ/D}{\varepsilon_{LA} + s_{US}\varepsilon_{US} + s_R\varepsilon_R}$$

Here, *dQ* stood for the change in the dollar-zone quota in the EU, and *D* for the world demand for dollar-bananas. Consider now what shift in EU demand would occur following a change in the exchange rate.
The standard demand function, disregarding other explanatory variable than the price, is

$$d\ln c = \alpha + \varepsilon \ln p_{eu}$$

Here, a suffix *eu* is added to indicate that it is the local price which is important. If all bananas would be imported from the dollar-zone, this local price is the product of the dollar-price and the exchange rate. Actually, about 65% come from this region. For imports from dollar-zone the formula can be written as

$$d\ln c = \alpha + \varepsilon \ln p_{\$} + \varepsilon \ln x_{\$}^{€}$$

Here the last term is the Euro-dollar exchange rate.
A change in this exchange rate affects consumption just like a change in dollar-prices. Hence, if the exchange rate would go up by 1%, more euros are to be paid for one dollar, hence consumption will fall by ε, or 0.5% in our case. This does not affect all EU imports, but around 65% would be. Such an exogenous change would have repercussions for world market and EU prices. The 1% increase in exchange rate leads to 0.5% decrease in the demand for dollar-bananas, which have a share of 27% of the world market. As a consequence, world market prices would go down by 0.2%, while prices in euro would go up by (1.0-0.2=) 0.8%.
Consider the position of a trader in this context. He buys bananas for dollars and sells these for euros. If the euro depreciates, prices in euros should go up if he must meet his commitments in dollars. But if these commitments are largely in euro-terms, there is less need to adjust the euro-price. If the competition of ACP bananas (not affected by this exchange rate) is strong, there are fewer possibilities to adjust the euro-price and, finally, the agreed

price for the bananas may even have been in euros rather than dollars. Theoretically, the equilibrium lies in between; this is what the formula tells us. In practice, there may be considerable time lags and rigidities in the euro-prices. The changes that are observed in the retail prices of Figure 3.5 might reflect exchange rate changes rather than actual changes.
Figure 3.6 shows the unit import values into the EU, expressed both in US$ and in euros (or its forerunner the ECU). The graph makes clear that the swings noticed in the dollar prices in recent years are hardly reflected in the euro prices. The recorded unit imported values might, therefore, reflect demand side influences as much as supply side effects.

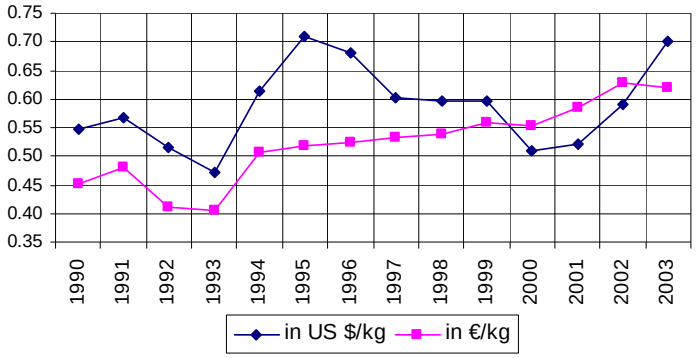


Figure 3.6 Import Unit Values of Bananas into the EU15 from Latin America,
sources Comtrade, IMF

In particular, the spectacular rise in import unit values between 1993 and 1995, which is 39% in US dollar terms, is 'only' 28% in euro terms, as the dollar depreciated by 9% against the European currencies.

Comparison of Figures 3.5 and 3.6 makes clear that the changes that are recorded for the retail prices in Germany are also reflected in the unit import values. This is surprising because import values should normally reflect FOB values plus the margin for international trade only, and need not be affected by the currency or regime of the importing country. The fact that it is indicates that the import pricing of the bananas into the EU responds to the EU demand conditions, inclusive of the import regime. Given the dominance of multi-national companies in the banana trade, a relatively high degree of *transfer pricing* occurs in this field. The prices that are recorded for imports are often recorded for goods that do not change ownership upon importing. Hence, it is up to the importer, and the custom (and tax) officials to determine the correct price. Importers, especially the transnational companies, have a natural interest in having relatively high import prices, implying that any profits are not made within the EU but offshore in the maritime transport. The latter source of profits is likely to be taxable at lower rates than EU profits.

Do import prices respond to regime changes? The analysis reported in chapter 4 shows that the margins between FOB prices and CIF prices in the EU are high by international standard, even when adjusted for longer transport distances.

Of the two questions, asked at the beginning of the section, we have answered one definitively positive: do the higher prices, caused by the restricted supply in the European Union show up in the import prices? The above shows this. Though positive, the answer is not complete. The effects may also turn up in other stretches of the chain from producer to consumer. We return to this question below, after discussing the question of overshooting effects that the regime may have had and that are due to oligopolistic structure of the market that is created.

Oligopoly

As mentioned at the start of section 2, the original reduction in supply caused by the CMOB was around 10% for the EU as a whole, but has affected Germany more and France less than this. Comparing 1995 with 1992, German consumption dropped by 12.6%, while EU15's consumption fell by 10.9% and France's consumption rose by 11.4%. On the basis of the average demand elasticity for the EU of -0.5, as employed earlier, a decrease in supply by 12.6% would have led to a price increase of 25%. Actual retail price change in Germany in US$ was 36%, but in euros it was only 24%, approximately what could be expected on the basis of a demand elasticity of -0.5. If this elasticity would be higher, for example, Badinger's (2002, p. 64) estimate of -1.08, the same supply reduction by 12.6% would require prices to rise by only 11.7%, much less than the observed increase in euro-prices in Germany.

In this context, it is interesting to note that European Commission itself apparently accounts for reduced competition in the EU market due to the CMOB. In the calculation of possible effects of the 1999 proposals, the Commission submitted calculations to the Agrifin Committee of the European Union in which the effect of additional supply in 2000 was calculated. In these calculations, not just a price elasticity of demand of 0.6 is employed (somewhat higher than our estimate), but also a further price effect due to "increased competition" of no less than 5%. Appendix D provides the full text of the EC calculations at that time.

Retail, wholesale and import prices

Having established that import unit values are linked to the demand side, we proceed to answering the question on how close this link is. If it is fully representative, we have found a good basis to represent the effect of changes in the EU market on the prices, and can continue from there.

To investigate the link, we look at the relationship between wholesale price in the EU and the import prices. As indicate above, the various EU countries have responded rather differently to the CMOB, with France and the UK seeing a reduction of the retail prices, and Germany witnessing a strong increase. Treating the EU as one country is clearly incorrect, but the restriction on imports introduced by the CMOB applied to this entity. As it restricted supply by more than before, prices had to go up, on average. We construct an average indicator of the wholesale prices by taking an average of four retail prices available, those for France, Germany, Italy and the UK. The weights we apply take consumption in the UK and Italy as weights for these variables (20% and 10% respectively), consumption in Portugal, Spain and France as the weight of the French wholesale price (30%), and take Germany to be representative of the "Rest of the EU15" (40%). Using the data partly shown in Figure 3.5, the EU retail price is as given in Figure 3.8, where it can be compared with what we may call the import price.

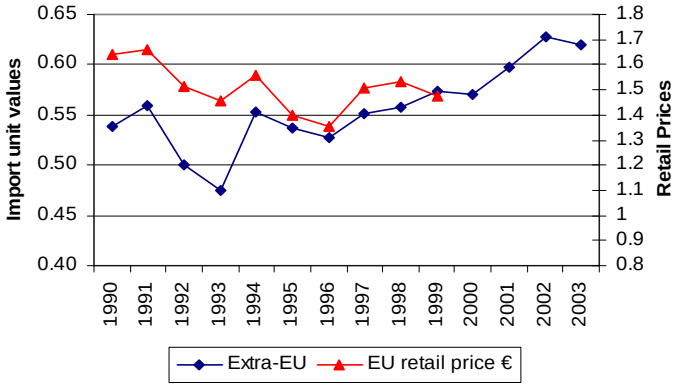


Figure 3.8 Import unit values and retail prices in the EU (€/kg)

There is therefore a degree of correspondence between import unit values and the retail prices within Europe that is not caused by changes in the supply prices. Obviously, such relationship should hold even more strongly for the relationship between retail prices and prices at the wholesale level. A statistical source close to the import unit values, and representative of the wholesale level is the intra-European price. This import unit value for intra-European trade, published by Eurostat, provides a basis for the wholesale prices in which trade taxes and the effects of quotas are incorporated. The following Figure 3.9 adds this intra EU import unit value to the graph above, showing the closer correlation between the latter and the retail prices.

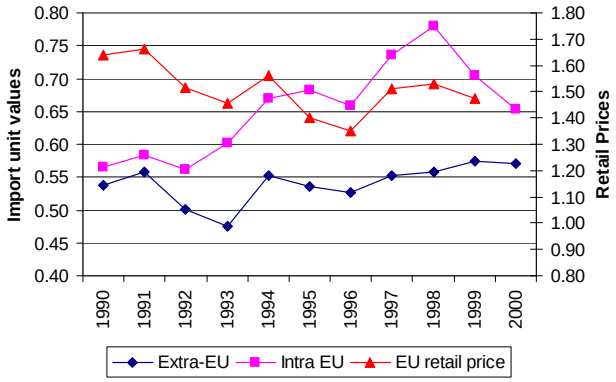


Figure 3.9 Retail prices and import unit values in the EU (€/kg)

The introduction of the CMOB in 1993 has led to a change in the flows through which bananas enter into the wholesale distribution. While intra-EU trade was of minor importance before 1994, it grew in importance rapidly after the common regime was installed. Thus, France saw the share of intra-EU trade increase from 1% in 1990 to 24% in 1995, for the UK this share increased from 12% to 22% and Germany recorded an enormous change from 1% in 1990 to 50% in 1995. A much larger share of bananas now reaches the consumer via other countries, notably via the port of Antwerp in Belgium. The average import unit values of each of the EU countries are affected by this diversion of trade channels. Whereas import unit values used to refer to the extra-EU import unit values, it now incorporates the intra-EU prices too, and these latter prices are inclusive of the tariff and any quota rents.

Figure 3.9 shows that the margin between the intra-EU price and the extra-EU import unit value has widened considerably after introduction of the CMOB. This too is a reflection of the tariff and quota rents that have varied over the period.

Distribution of quota rents of the effects over intra and extra EU import prices

The question now poses itself as to how the two effects of the introduction of the CMOB, on the wholesale prices and on the extra-EU import prices relate to one another. Is it possible to distinguish how much of the tariff and quota rent show up in the margin between FOB and CIF or in the margin between CIF and wholesale?

Figure 3.10 below indicates the values of the margin between the FOB price in Latin America and the intra-EU trade price, as representative of the wholesale prices within the EU-15, split into the first stage FOB-CIF and the second stage between the import unit values extra EU and those intra-EU.

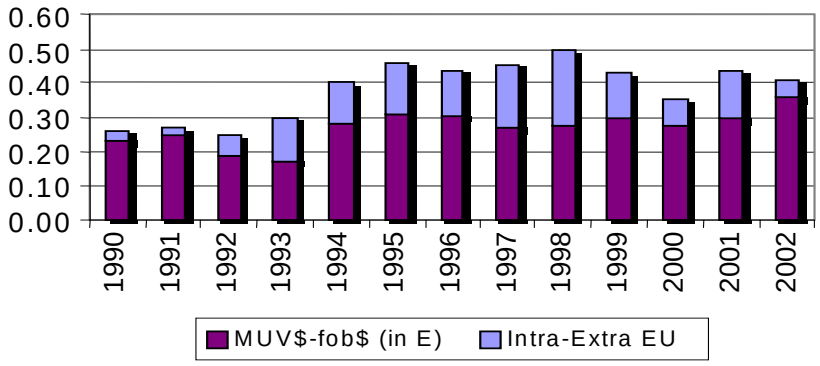


Figure 3.10 International and domestic margins in banana trade from dollar countries to EU-15

In Figure 3.11, we take the years 1990-1993 as the basis, and see what changes in the international and EU margins have occurred since then. Thus, Figure 3.11 presents the deviations between the observed margins and those prevailing before 1994.

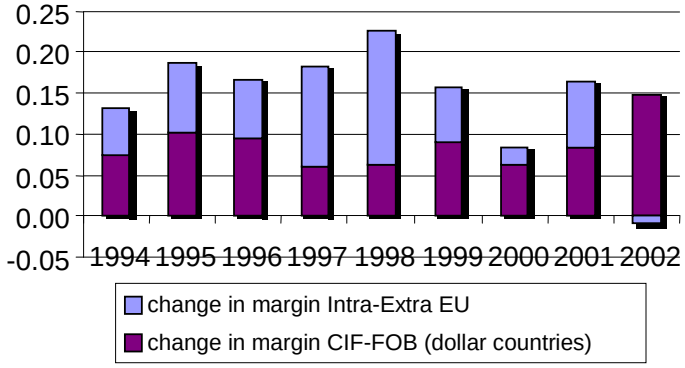


Figure 3.11 Changes in international and domestic margins, in banana trade from dollar countries to EU-15 compared with 1990-1993

The margins, both between FOB and CIF and between the latter an the internal market have clearly increased. On average, the change over the period 1994-2001 is 8 eurocents for both margins (leaving 2002 outside, as trade data are still unreliable for this year). The Figure also shows how increases in one margin are partly compensated by decreases in another. In 1999, in particular, import unit values of extra-EU trade in Germany went up by 14 eurocents per kg, without significant changes in FOB-prices or wholesale prices.

On average, 16 eurocents per kg have been added to the margin between FOB Latin America and wholesale prices within the EU, represented by the intra-EU import unit values.
Of these 16 cents, 8 cents are incorporated into the domestic margin, and 8 cents therefore in the international (i.e. outside EU) margin. The tariff of 7.5 cents forms part of the margin, and is included in the second stage, after import. Hence not much room is left at this second stage for any quota rent. The change in the first stage, therefore, reflects the quota rent. If the figures for 2002 are indicative, this part has increased further in 2002.

Conclusion on prices

The conclusion of the analysis as to 'what price' to use, is base on two considerations. One is that theory tells us that an effective quota must lead to a wider margin between the price to the supplier and the price faced by the consumer. The above analysis shows that the quota rent and the tariff are visible in the wider margin between FOB prices for Latin American producers and intra-EU prices. To a large extent, the quota rent is located in the international FOB-CIF margin.
This implies that the import unit values of the EU are themselves sensitive to the quota and cannot be used to represent the prices without quota and tariff.

CMOB and trade
The introduction of the CMOB in 1993 has pushed retail prices up, as predicted by theory. This was particularly well visible in Germany. In France and the UK, however, retail prices actually came down, and this reflects the different starting points and the way in which import licenses were distributed. The large share of licenses distributed to firms that traditionally imported into these countries meant that bananas became more easily available in these markets than in the past. The distribution of bananas over the EU countries has not responded smoothly to the one-market idea underlying the market organisation. Seven years after the introduction the market share of ACP bananas in Germany's imports has only risen to some 10%, while in France, Côte d'Ivoire and Cameroon still hold a share of more than 70% (UNCTAD, 2003, pp. 66-67). However, retail prices in the major EU countries have converged substantially since 1993, as shown by Figure 3.5.
The import unit values recorded in the statistics have also responded to the CMOB and reflect demand conditions rather than the traditional FOB-prices plus cost, insurance and freight.
Another potential reason to use the import unit values as a measure of the relevant price is related to the definition of trade value. The GATT text mentions that an agreement should be sought which is 'no less favourable to trade'. Traded quantities are by their nature the outcome of the confrontation of demand in the EU and supply from the parties concerned and other suppliers. Tariffs, exchange rates and other financial measures affect both quantities and prices of trade. It is the *value* of the trade that is a relevant measure on which talks should be based.

There are two ways to measure the value of trade of the exporting countries to the EU. One is based on the FOB prices of the exporting countries; one is based on the recorded CIF import prices into the EU. Of these two, the more reliable one is the second approach, as only at the point of import into the EU the actual origin is recorded, whereas the eventual destination of the exports from the exporting countries cannot be accurate at the time the goods leave the country.
This would imply that all the effects of European import regime and European demand conditions on the import prices into the EU, which we have shown above, are counted as part of the trade value.
These import unit values do not move in line with FOB prices, however, and one might argue that FOB prices are the prices accruing to producing countries, whereas the difference between import prices and export prices accrues to trading companies. An obvious mixture of

the two approaches would be to use the quantities imported as measured by Eurostat, and FOB prices taken from the export statistics of the producing countries.

3.4 Quota rents on ACP trade

The initial levels of ACP quotas and the distribution of licenses were made in a way so as to safeguard the access of bananas from ACP countries into the EU. To prevent strong competition among the ACP countries, country allocations of the quota were put in place in 1993. Major recipients were Cameroon and Côte d'Ivoire, who received 18% of total ACP quota each, and St Lucia and Jamaica with 15% and 12%, respectively. Later adjustments brought larger quota to the African producers (each 7500 tons extra), but in 1999 the country allocations were abolished.

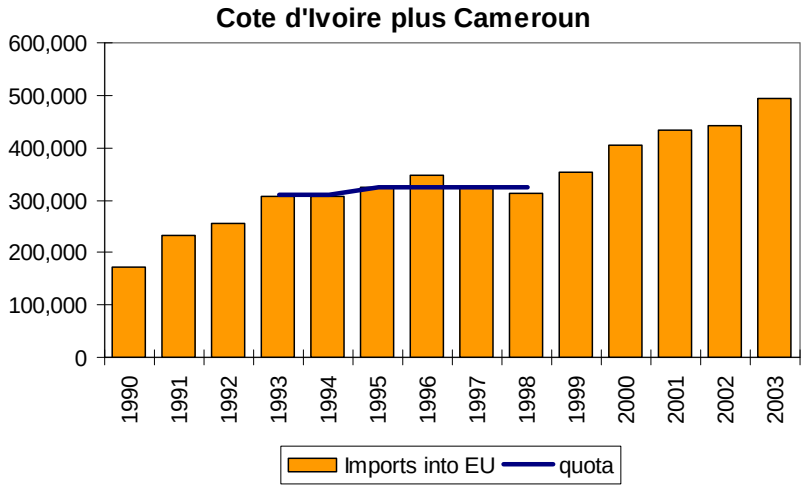


Figure 3.11 Imports from Côte d'Ivoire and Cameroun into EU-15, and quota (tons)

For the two African producers, these quotas have been binding, as shown in Figure 3.11. Throughout the period, even before 1994, both countries enjoyed privileged access into France. Yet, FOB prices did not show such high levels. After the introduction of the CMOB, FOB prices rose. This amounted to an enormous real increase in prices in francs CFA after the devaluation by 50% of this currency vis-à-vis the French franc in January 1994. Not until 1997 did FOB prices started to fall in euro-terms (see Figure 3.12). FOB prices kept declining since then, in spite of import unit values into France, that hovered between 50 and 60 euro cent per kg. In particular, in the years until 1999, the binding quotas should have led to considerable quota-rents. These did not show up in the FOB prices, however, but they appear to do so in the unit import values. These fell in 1999 but increased again in 2001. This may again be a reflection of the constraints on access into the EU. Even though the ACP country allocations were abolished, licenses were still needed. These were distributed to operators on the basis of historical performance, and did not accommodate large increases in production such as from the two African countries (and Belize and the Dominican Republic). Thus either the operators with licenses had to establish themselves as trading partners for Ivorian and Cameroon producers, or the traditional operators without enough licenses had to buy these. This process widens the gap between producer and consumer prices, and effectively widens the margin between FOB and import unit values.
Thus, the margin between EU import price and African FOB price in 2002 was back at the level of 1992, again 33 cents. This margin must be considerably higher than the transport costs, as the margin has been as low as 22 cents and 20 cents in 1995 and 1996.

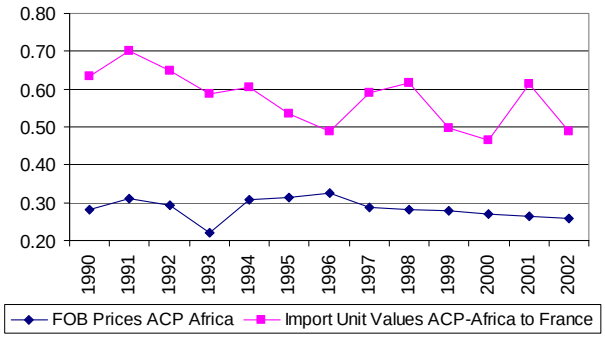


Figure 3.12 prices FOB African ACP countries and import unit values from Africa into France

If quota on ACP imports were abolished, there is no longer a need to buy licenses to import, and this would reduce the margin by some 10-15 cents. In the simulation of Chapter 4 we shall employ 10 cents as a modest estimate.

In the above discussion, we did not distinguish between rents and/or tariffs that may show up at the wholesale level. One reason is that a sufficiently long time series was unavailable, but a major reason is the narrow relationship between the import unit values in France and the retail prices, as shown in Figure 3.13. The orange squares show the data points before 1994. Apparently, the relationship is close, without major breaks before and after the introduction of the CMOB in 1994: prices both FOB and at the import level were lower, but following the same pattern still.

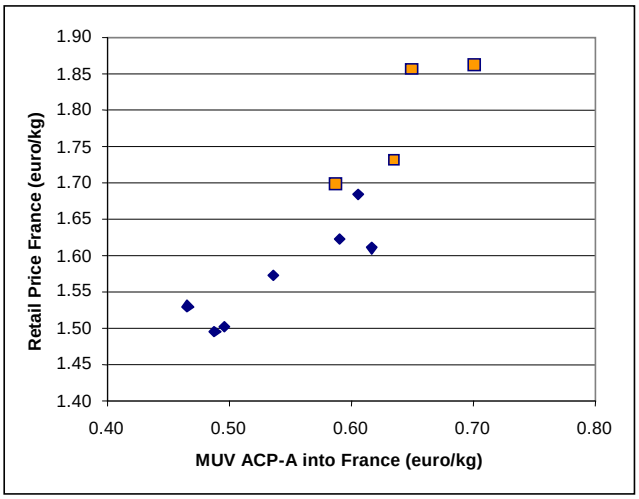


Figure 3.13 Relationship between retail prices and import unit values from ACP-Africa into France (€/kg) [orange squares refer to pre-1994 years]

This analysis of the relationships between ACP-Africa and EU, and France in particular, has led to the result that the margin between FOB and CIF Europe is affected by the banana policy of the EU and the quota regulation itself. In particular, there is reason to believe that considerable quota rents are incorporated into these margins.

3.5 Application to the change from tariff-quota to tariffs only

The first step in comparing the situation with and without quotas is to make the comparison between countries facing different quotas and tariffs at the moment. This we shall do first for the aggregate of the ACP countries and the aggregate of the dollar-zone producers. We then look at the case of individual countries, including Colombia.

In the comparison of import unit values (resembling 'CIF-prices') and unit export values (proxy for 'FOB-prices') we take the data of Eurostat to calculate the former, and data from the FAO for the latter. Figure 3.14 and 3.15 show the results. The whole of the dollar zone producers experienced lower CIF prices (until very recently), substantially lower FOB prices, but higher margins between the CIF and FOB prices.

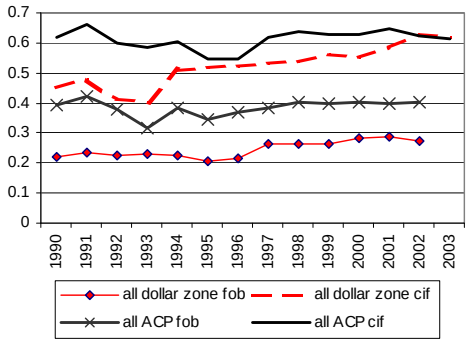


Figure 3.14 CIF-EU and FOB prices, dollar zone and ACP countries(€/kg)

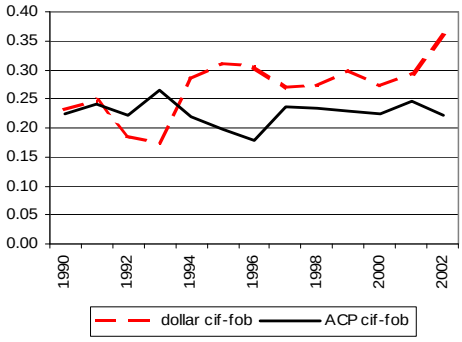


Figure 3.15 Margin between CIF-EU and FOB prices, dollar and ACP countries (€/kg)

The lower CIF prices can be attributed to the extra tariff that must be paid upon entry into the EU, and (potentially) to the quota rent. As to the former, the average difference between the CIF prices from the two zones over the period 1994-2003 was 5 euro cent per kg, which is less than the €0.075/kg of the tariff. Hence no room is left for any difference in quota rent to become visible in the CIF prices. The sudden rise in the CIF prices of dollar zone producers in 1994 suggests, however, that some of the rents are reflected in the higher CIF prices at that time.

FOB prices of dollar producers are consistently below those of the ACP countries, on average 13 euro cents lower, reflecting lower production costs and the minor share that the EU has in all the exports of the dollar zone producers. ACP countries export to EU almost exclusively. When dollar zone producers do, the margin between CIF and FOB is, on average over 1994-2002, 8 euro cents higher. This is the same difference that we found earlier for the effect of the CMOB on the margin between FOB and CIF. Then, the analysis was based on the differences over time, now the outcome is derived from the comparison of two producers.

The distribution of this tariff over the CIF-price and the FOB-price is reassuringly in line with the theory. As indicated earlier (above chart 3.1), a tariff-increase by 1% of the world market price leads to EU-price being higher by about 0.3 % and world market prices being lower by 0.7%. Thus most of the effect would go to the world market price. The data underlying Figures 3.10 and 3.11 distribute the 8 cents over CIF-price and FOB-price in proportions that suggest stronger supply response than the 0.4 elasticity we had: , -3 cents for FOB-price, +5 cents for CIF-price.

Concluding, we are able to say that the effects of the tariff-quota on the producers can be traced through the changes in the import unit values and the export unit values of the countries concerned. The quota rents show up in the levels of the margins between import

unit values and export unit values, while the tariff is seen in the difference of the margins between countries affected by the tariff and those that are not.

Distinction within the ACP countries

The ACP countries that were aggregated in the last section, are now grouped in to the African producers (dominated by Côte d'Ivoire and Cameroon), and the ACP producers from the Caribbean, also including Belize and Surinam. The table 3.1 below indicates the average CIF prices, FOB prices and margins between the two for the separate groups, with the dollar-banana producers also given for comparison.

Table 3.1 CIF prices, FOB prices and margins (€/kg)

	1994-1998	1999-2002
	CIF prices	
dollar zone	0.52	0.58
ACP Africa	0.58	0.59
ACP Caribbean	0.60	0.68
	FOB prices	
dollar zone	0.24	0.28
ACP Africa	0.30	0.27
ACP Caribbean	0.38	0.48
	CIF-FOB Margins	
dollar zone	0.29	0.30
ACP Africa	0.27	0.32
ACP Caribbean	0.23	0.20

Whereas the margins for the Latin American producers have remained steady over the period of the CMOB, margins for the African producers have increased and those for the Caribbean group have decreased. At the same time, FOB prices from Africa have fallen, while those from the Caribbean rose substantially. This suggests that the attractiveness of importing form African ACP counties must have increased and that higher rents are earned by importing from these regions, while imports from ACP Caribbean as a whole have become more expensive and less attractive to the importers. The low margins of around 20 cents indicate that in the shipments from the Caribbean no or hardly any rents are incorporated and that – if rents exist – these are transmitted to producers. The high FOB prices for the Caribbean producers are indications of their high marginal production costs; their African colleagues are able to produce cheaper, but this is not reflected in the European prices due to rents on the quota for ACP producers, and the distribution over operators. Apparently, even though the ACP quotas were not fully used until recently, African producers had difficulties in finding importers in possession of import licenses and were charged accordingly.

The position of Colombia, the Dominican Republic and Côte d'Ivoire

Colombia, as the third exporter of bananas from Latin America, holds around 23% of the imports from the dollar zone into the EU. We now check if the changes for the aggregates also apply to individual countries.

The Figures 3.16 and 3.17 below show the prices for three major banana-producing countries, each from a different zone. Côte d'Ivoire as a beneficiary of the CMOB for ACP countries; the Dominican Republic which was initially among the non-traditional ACP countries, benefiting from the tariff preference, but – until 1999 – competing for licenses with Latin-American countries; and Colombia as a major dollar-zone exporter.

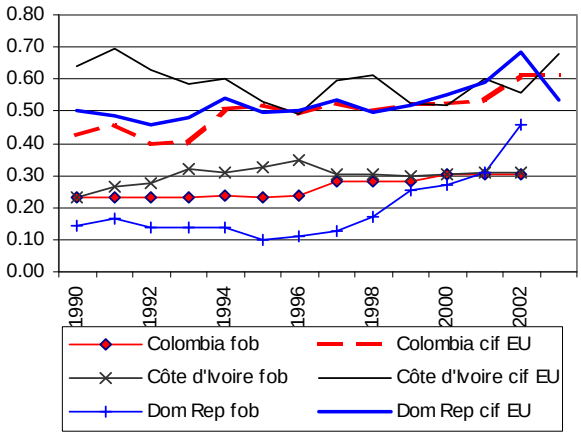


Figure 3.16 CIF and FOB prices for three countries

Comparing the years before 1993 with those more recent, there is clear convergence of import unit values immediately after 1993, whereas the FOB prices converge only gradually. It is also clear that they reach near-equality in 2001[4]. For three countries from a different import regime, and facing different tariffs (€ 0.075/kg for Colombia, 0 for the other) to be paid upon entry into the EU, this is remarkable.
The difference between CIF and FOB prices reflects the attractiveness of shipping goods from a country to the EU. Figure 3.17 shows the evolution of the CIF-FOB margins over time for the three countries.

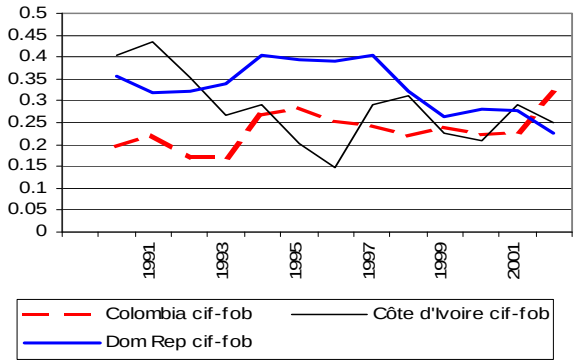


Figure 3.17 Margins between CIF EU and FOB in €/kg

As Figure 3.17 shows, the margins between CIF and FOB have also converged. It used to be very attractive to spend euros on purchasing bananas in the Dominican Republic and importing these into the EU, but the advantage seems to have faded as of 1999. In the period 1999-2001, the mean difference of the margins of Colombia and the Dominican Republic was just over 4 euro cents, against 14 euro cents in the years before 1999. Between 1995 and 1999, the Dominican Republic had a quota of 55000 tons, which was initially exceeded, but later not fully used. After 1999, its exports to the EU expanded strongly.

Comparison of Colombia with another major supplier to the EU outside the dollar zone, apparently does not help in showing what tariff might be equivalent to the quotas imposed on the dollar zone producers.

[4] Equal FOB prices in euros do not, however, have the same effect for each country. Côte d'Ivoire, for example, experienced a 50% devaluation of its currency in 1994, so that the observed steady level of FOB prices actually amounted to a strong real incentive to production.

The conclusion of this exercise must be that individual countries, such as Colombia and Côte d'Ivoire, do not individually display the effects of market regimes in the prices. The heterogeneity of the product and the services provided in shipping the goods, are such that prices can differ consistently from one country to the other. This precludes drawing conclusions from country comparisons.
The adequate comparison, therefore, is between the aggregates of the dollar zone producers, and the ACP producers. Individual countries can be assumed to experience changes in their CIF and FOB prices, proportional to the changes that are imputed to the aggregates.

3.6 Conclusion

Chapter 3 started with a theoretical explanation of the effects that removal of quotas and changes in tariffs would have on the prices in the world market, and in the EU. We showed that taking into account what changes would occur in the possibilities for the ACP countries had an effect on the appropriate calculations of the equivalent tariff for Latin American countries. As supply from ACP countries, notably Africa, may expand under the new system, a lower tariff equivalent results for the Latin American producers.
We have also shown that the likely size of the quota rent, on average over the period, is in the order of 8 cents. This resulted from a comparison over time, where we looked at the data on the price margins between intra-EU trade and extra-EU trade, and between import unit values from Latin America and their export unit values in 1990-1993 and compared this with the situation after 1993. We showed that both margins had increased with 8 cents.
Likewise we compared the international margins for Latin America with those for the ACP countries as a whole, and concluded that, again, the price gap between the two margins came out at 8 cents, with Latin America having the larger margin. We see this as evidence for quota-rent being incorporated into the international trading costs. This view was confirmed in interviews with people knowledgeable in banana trade.

Chapter 4 Modeling for simulation

4.1 Estimating supply and demand elasticities

In this section we present estimation of supply and demand elasticities. Specifically we are interested in the response of producers and exporters in producing countries, and the response of consumers and importers in consuming countries. This information will serve as empirical foundation of the parameters in the partial equilibrium model, which will be constructed to simulate the impact of different tariff scenarios. In order to quantify the supply and demand response we estimate simple supply and demand equations. We make use of two major data sources, namely FAO STAT (production, area, yield, exports and imports of bananas (the latter two in quantities (metric tonnes) and values (x1000 US$))[5] and the IMF International Financial Statistics (exchange rates, consumer price indices, gross domestic income, population). The FAO data start in 1961 and extend up to 2003 for production and 2002 for export and import. The data are collected for a selection of around 25 of the most important producing and consuming countries. A full account of the data used in the estimations, along with the explanation of the variables of the estimated equations, is given in Table 1. A listing of the countries selected comes along with the tables with estimation results.

Table 4.1 Explanation of variables, transformation of variables and data-sources

All variables are annual variables, and vary by country (j) and year(t)	
Q	Production of bananas, thousand tons (FAO STAT)
REUVLC	Real export unit value in local currency units: REUVLC=EUV.ER / CPI
ER	Exchange rate: local currency unit per US$ (IFS, IMF)
CPI	Consumer price index (IFS, IMF)
EUV	Export unit value in US$: EUV = XV / XQ
XV	Exports of bananas, values, x 1000 US$ (FAO STAT)
XQ	Exports of bananas, quantities, x 1000 tonne (FAO STAT)
RIUVLC	Real import unit value in local currency units: RIUVLC=IUV.ER / CPI
IUV	Import unit value in US$: IUV = MV / MQ
MV	Imports of bananas, values, x 1000 US$ (FAO STAT)
MQ	Imports of bananas, quantities, x 1000 tonne (FAO STAT)
C	Consumption of bananas, thousand tons: producers: C = Q + MQ - XQ non-producers: C = MQ - XQ
GDIPC	Per capita gross domestic income in constant prices: GDIPC = GDI / POP
GDI	Gross domestic income in constant prices (IFS, IMF)
POP	Population (IFS, IMF)

In order to estimate supply response, we have estimated the response of production and export on prices. Prices are obtained by calculating export unit values, i.e. exports in value divide by exports in quantity. The US$ export unit values are converted to local currency units since producers and exporters will evaluate revenues in terms of local purchasing power. Further, in order to make prices comparable over time we have deflated the local currency export unit value with the country-specific consumer price index.

Equations are estimated using an error correction framework, both in a two-stage formulation as well as a formulation where equilibrium and adjustment equations are combined. The following specification (combined formulation) is estimated for production:

[5] The FAO data on import and export do not allow a complete identification of bilateral trade flows, i.e. a full account of exports by country of destination and imports by country of origin. For the purpose of estimating supply and demand responses such bilateral data are not needed. However, in order to analyse margins, the difference between FOB (export unit values) and CIF prices (import unit values) we do need bilateral trade data. Also to obtain insight in the geographical distribution of trade, bilateral trade data are indispensable. Bilateral trade data, obtained from COMTRADE (UNCTAD), are discussed and margins are investigated in the following section.

$$\Delta \ln Q_{jt} = \alpha_0 + \alpha_1 \Delta \ln REUVLC_{jt} + \alpha_2 \ln Q_{jt-1} + \alpha_3 \ln REUVLC_{jt-1} + \alpha_4 TREND_t$$

where

$$REUVLC_{jt} = EUV_{jt} * ER_{jt} / CPI_{jt}$$

$$EUV_{jt} = XV_{jt} / XQ_{jt}$$

The two-stage variant of this equation is

$$\Delta \ln Q_{jt} = \alpha_0 + \alpha_1 \Delta \ln REUVLC_{jt} + \alpha_2 RES_{jt-1} \quad \text{(adjustment equation)}$$

$$\ln Q_{jt} = \beta_0 + \beta_1 \ln REUVLC_{jt} + \beta_2 TREND_t \quad \text{(equilibrium equation)}$$

$$\text{where } RES_{jt} = \ln Q_{jt} - [b_0 + b_1 \ln REUVLC_{jt} + b_2 TREND_t]$$

and b_k are sample estimates of β_k

The trend variable in the long run equation is included to control for a variety of determinants like change in productivity, improvements in production, marketing and export institutions, improved statistical registration of historical data. The trend variable takes on the value of 1 in 1961 and increments 1 each year.

We have evaluated the estimation results on econometric grounds, by looking at the significance of coefficients and the overall goodness of fit of the equation. Outliers have been omitted from estimation. On top of the econometric evaluation we have evaluated the estimation results in terms of their economic plausibility: we expect a positive coefficient on prices and the coefficient reflecting the adjustment towards the long run equilibrium (α_2) should have a value between 0 and –1. Trend developments could be either negative or positive. A number of estimation results that are acceptable on econometric grounds have been rejected on economic grounds.

The estimation of export response to prices is specified analogously:

$$\Delta \ln XQ_{jt} = \alpha_0 + \alpha_1 \Delta \ln REUVLC_{jt} + \alpha_2 \ln XQ_{jt-1} + \alpha_3 \ln REUVLC_{jt-1} + \alpha_4 TREND_t$$

and this equation has the following two-stage variant:

$$\Delta \ln XQ_{jt} = \alpha_0 + \alpha_1 \Delta \ln REUVLC_{jt} + \alpha_2 RES_{jt-1} \quad \text{(adjustment equation)}$$

$$\ln XQ_{jt} = \beta_0 + \beta_1 \ln REUVLC_{jt} + \beta_2 TREND_t \quad \text{(equilibrium equation)}$$

$$\text{where } RES_{jt} = \ln XQ_{jt} - [b_0 + b_1 \ln REUVLC_{jt} + b_2 TREND_t]$$

and b_k are sample estimates of β_k

In order to estimate demand response, we have estimated the response of consumption and import on prices and on per capita gross domestic income. Consumption of bananas by importing countries is constructed by subtracting re-exports from imports, while consumption of bananas by exporting countries is constructed by subtracting re-exports from domestic production and imports. Prices are obtained by calculating import unit values, i.e.

imports in value divide by imports in quantity. The US$ import unit values are converted to local currency units since consumers and importers will evaluate cost of consumption in terms of local purchasing power. Further, in order to make prices comparable over time we have deflated the local currency import unit value with the country-specific consumer price index. Series on gross domestic income in local currency units and constant prices are obtained directly from IFS, IMF and converted to per capita values.

$$\Delta \ln C_{jt} = \alpha_0 + \alpha_1 \Delta \ln RIUVLC_{jt} + \alpha_2 \Delta \ln GDIPC_t + \alpha_3 \ln C_{jt-1} + \alpha_4 \ln RIUVLC_{jt-1} + \alpha_5 \ln GDIPC_{t-1} + \alpha_6 TREND_t$$

where

$$RIUVLC_{jt} = IUV_{jt} * ER_{jt} / CPI_{jt}$$

$$IUV_{jt} = MV_{jt} / MQ_{jt}$$

Likewise, we may write the above equation in a two stage formulation:

$$\Delta \ln C_{jt} = \alpha_0 + \alpha_1 \Delta \ln RIUVLC_{jt} + \alpha_2 \Delta \ln GDIPC_t + RES_{j,t-1} \text{ (adjustment equation)}$$

$$\ln C_{jt} = \beta_0 + \beta_1 \ln RIUVLC_{jt} + \beta_2 \ln GDIPC_t + \beta_3 TREND_t \text{ (equilibrium)}$$

where $RES_{jt} = \ln C_{jt} - [b_0 + b_1 \ln RIUVLC_{jt} + b_2 \ln GDIPC_t + b_3 TREND_t]$

and b_k are sample estimates of β_k

Again, we have evaluated the estimation results, on the one hand, on econometric grounds by looking at the significance of coefficients and the overall goodness of fit of the equation and, on the other hand, on economic grounds. On economic grounds we expect consumers to react negatively on prices and positive on income. Long run income elasticities are at the highest around one, but preferably somewhat lower. We have some reservations about estimation results indicating income elasticities that are substantially above 1, especially in high-income countries. Again, the coefficient reflecting the adjustment towards the long run equilibrium is required to have a value between 0 and –1. Trend developments could be either negative or positive. Potential multi-collinearity between the trend variable and the income variable may seriously disturb the estimated coefficients. Variables that generate highly insignificant coefficients have been omitted from the estimated equation. It is, however, difficult to identify a priori if, and in what combination prices and income have a short run or long run impact of consumption.

We have estimated import equations entirely analogous to the consumption equation, using the identical explanatory variables, and applying the same error correction framework.

Next we come to the presentation of the estimation results. The supply and demand equations are estimated for a selection of around 25 of the most important producing and consuming countries. All equations are estimated with Ordinary Least Squares (OLS), except for the equations of Table 4.5, which are estimated with Instrumented Variables (IV). The estimation results are reported in Table 2 to 6. All tables report elasticities, either with respect to price (all tables) or with respect to price and income (only in case of consumption and import, Table 5 and 6). All reported elasticities are statistically significant at the 5% level.

In order to obtain significant coefficients we have put some effort in searching for a subset of observations that appeared well behaved in terms of economic theory. In model selection the significance of the driving variables – price and income – is given more importance than goodness of fit. As a result of this procedure the estimated equation may be restricted to observations of a limited period and, hence, not reflect all, and possibly recent, developments and it may not capture structural breaks in the data, possibly related to regime

changes. Extensive diagnostic statistics are not reported, but may be supplied from the authors if required.

Table 4.2 Supply elasticities of selected countries
Elasticities of production with respect to price, estimated on the basis of FAO & IMF data

Producing countries			2 stage		Combined	
European producers			**Short run**	**long run**	**Short run**	**long run**
Guadeloupe		EU		0.290	0.188	0.408
Martinique		EU	0.188	0.169		0.283
Portugal	**Madeira**	EU				
Spain	**Canarians**	EU	1.011	1.034	0.988	0.986
Greece	**Crete**	EU	0.332	1.238	0.491	1.338
African, Caribbean and Pacific countries						
Belize		ACP				
Dominican Rep.		ACP	0.125	0.170	0.111	0.111
Cape Verde		ACP	0.470	0.771		
Dominica		ACP	0.371	1.044	0.484	2.100
Grenada		ACP	0.334	0.823	0.452	1.621
Jamaica		ACP		0.380		
Saint Lucia		ACP		0.634		
Saint Vincent and the Grenadines		ACP		1.480	1.176	1.634
Suriname		ACP				
Côte d'Ivoire		ACP	0.374	0.401	0.427	0.284
Cameroon		ACP	0.084	0.169	0.076	0.354
Ghana		ACP			0.248	0.358
US $ countries						
Brazil		US$				
Colombia		US$		0.181		
Costa Rica		US$		0.530		
Ecuador		US$	0.294	0.260	0.332	0.665
Guatemala		US$				
Honduras		US$	0.240	0.246		0.607
Mexico		US$	0.163	0.139	0.075	0.366
Nicaragua		US$				
Panama		US$	0.597	1.483	0.696	1.938
Asian producers						
China		AS	0.358	0.302	0.318	0.381
Malaysia		AS	0.038	0.201		
Philippines		AS	0.229	0.582		

Table 4.3 Supply elasticities of selected countries

Elasticities of exports with respect to price, estimated on the basis of FAO & IMF data

Producing countries			2 stage		Combined	
European producers			**Short run**	**Long run**	**Short run**	**long run**
Guadeloupe		EU	0.441	0.333	0.444	0.317
Martinique		EU	0.260	0.221	0.233	0.243
Portugal	**Madeira**	EU				
Spain	**Canarian Islands**	EU				
Greece	**Crete**	EU				
African, Caribbean and Pacific countries						
Belize		ACP		0.209		
Dominican Rep.		ACP		2.217		
Cape Verde		ACP				
Dominica		ACP	0.218	0.942	0.380	2.321
Grenada		ACP	0.969	1.754	0.967	1.369
Jamaica		ACP	0.318	0.780	0.341	1.1924
Saint Lucia		ACP	0.706	1.075	0.958	2.221
Saint Vincent and the Grenadines		ACP	1.567	1.761	1.645	1.884
Suriname		ACP				
Côte d'Ivoire		ACP	0.600	0.555	0.564	0.440
Cameroon		ACP	0.240	0.519	0.225	0.473
Ghana		ACP	1.009	0.579	-	1.553
US $ countries						
Brazil		US$		0.079		
Colombia		US$		0.270		
Costa Rica		US$	0.274	1.242	0.515	1.638
Ecuador		US$	0.368	0.315	0.407	-
Guatemala		US$				
Honduras		US$	0.421	0.489	0.450	0.623
Mexico		US$	0.914	1.097	0.955	1.451
Nicaragua		US$	0.163	0.466	0.269	0.782
Panama		US$	0.346	1.105	0.364	1.162
Asian producers						
China		AS	0.524	-	0.253	-
Malaysia		AS	0.427	-	0.221	-
Philippines		AS		0.321		

In general we have estimated supply elasticities with export unit values and demand elasticities with import unit values, both because these are considered the most relevant price variables (and since superior price data could not be obtained easily). There is one exception to this rule. Since European producers do not export the calculation of the export unit value is impossible for these producers. We have resolved this by using the import unit values in these cases, since we believe that these import unit values are a reasonable proxy for the relevant price. The use of import unit values in the estimation of production response is only applied in the case of Portugal (Madeira), Spain (Canarian Islands), and Greece (Crete): for Guadeloupe and Martinique we do have export unit values.

Estimation of supply response is allowed under the condition that all the explanatory variables are exogenous, implying that they are not influenced by the supply response that is estimated. This is a reasonable assumption if countries are small producers and export a small quantity to the international market. These countries are simply to small to have an impact on prices. For larger producers, however, this assumption does not hold: their production and export decisions do influence prices. For this reason we instrument the price variable by estimating a

price equation and using the predicted value of the price equation in the supply response equation.

For this purpose we have estimated a price equation for each country, using lagged values, the exchange rateand the consumer price index as explanatory variables. The predicted value of this price equation is used as an instrument for price. Re-estimation of the supply responses generates the estimation output presented in Table 4.4. The most striking result of this exercise is that long run price elasticities (combined estimation) move to a unit value for both Colombia and Costa Rica[6].

Table 4.4 Supply elasticities of large players in the market (instrumental variables estimation)
Elasticities of exports with respect to price, estimated on the basis of FAO & IMF data

Producing / exporting countries		**2 stage**		**Combined**	
US $ countries		Short run	Long run	Short run	Long run
Colombia	US$	-	0.343	-	1.066
Costa Rica	US$	-	0.924	-	0.933
Ecuador	US$		0.189	0.331	-

[6] Results for Ecuador are statistically poor.

TABLE 4.5 Demand elasticities of selected countries

Elasticities of consumption with respect to price and income,
Estimated on the basis of FAO & IMF data

Consuming countries		2 stage		Combined		2 stage		Combined	
EU12		**Short run**	**long run**	**short run**	**Long Run**	**Short run**	**long run**	**short run**	**Long run**
France	EU12		-	-	-		0.218	-	0.177
Greece	EU12								
Portugal	EU12	-0.264	-0.375	-0.151	-0.403	0.928	0.992	0.895	0.832
Spain	EU12	-0.134	-	-0.134	-	2.260	0.486	2.242	0.453
Italy	EU12	-	-0.642	-0.164	-0.290	1.456	0.581	2.031	0.595
United Kingdom	EU12		-0.514	-0.104	-		0.712	-	2.997
Belgium	EU12	-0.558	-0.998	-0.623	-	1.925	0.932	1.860	0.835
Denmark	EU12	-0.443	-0.237	-0.386	-	1.991	0.476	1.591	0.825
Ireland	EU12	-0.746	-0.749	-0.608	-0.389	1.427	0.423	1.847	0.327
Netherlands	EU12	-0.570	-0.335	-0.561	-0.241	1.623	0.430	1.949	0.599
Germany	EU12	-0.295	-0.562	-0.344	-	1.998	0.897	2.317	1.042
EU15									
Austria	EU15	-0.265	-0.608	-0.224	-	1.458	0.393	1.696	1.027
Finland	EU15	-0.318	-0.657	-0.343	-0.803	1.460	1.470	1.261	1.198
Sweden	EU15	-0.188	-0.366	-0.152	-0.324	1.061	1.545	1.547	3.162
EU25									
Hungary	EU25	-0.564	-0.720			2.271	1.088		
Latvia	EU25	-0.432	-0.869	-0.389	-1.028	2.101	1.432	1.278	1.261
Lithuania	EU25								
Malta	EU25	-0.670	-0.905	-0.945	-1.268	-	0.622	-	0.614
Poland	EU25								
Cyprus	EU25								
Non EU European countries									
Romania	NEU								
Norway	NEU	-0.212	-0.465	-0.157	-	-	0.356	-	0.667
Switzerland	NEU	-0.078	-0.147	-0.086	-	1.047	0.827	0.626	0.532
North, Central and Latin America									
Canada	NA	-0.513	-0.673	-0.582	-0.713	-	0.770	-	0.772
USA	NA	-0.084	-0.114	-0.211	-	0.947	1.308	0.618	1.467
Argentina	LA	-0.143	-0.099	-0.234	-	1.334	1.752	1.469	1.439
Chile	LA	-0.184	-0.149	-0.415	-	1.312	1.564	1.419	1.358
Asia									
Japan	AS	-0.318	-0.241	-0.196	-	1.571	0.299	1.540	0.500
China	AS	-0.205	-0.806	-0.134	-	1.781	2.308	0.853	1.100
Korea	AS	-1.211	-0.850	-0.722	-0.274	4.150	2.254	2.364	2.364
Oceania									
Australia		-0.102	-0.156	-0.075	-	1.380	1.001	1.244	1.500
New Zealand	OC	-0.420	-0.741	-0.479	-0.545	1.975	1.591	2.859	2.030

Table 4.6 Demand elasticities of selected countries

Elasticities of imports with respect to price and income,
Estimated on the basis of FAO & IMF data

Consuming countries		2 stage		Combined		2 stage		Combined	
EU12		**short run**	**Long run**	**short run**	**long run**	**Short run**	**long run**	**short run**	**long run**
France	EU12	-	-0.265	-	-0.391	-	0.261	-	0.293
Greece *	EU12								
Portugal	EU12	-0.644	-1.149						
Spain **	EU12								
Italy	EU12	-0.359	-0.569	-0.286	-0.470	3.173	0.838	-	0.821
United Kingdom	EU12		-0.521	-0.101	-		0.714	-	3.429
Belgium	EU12	-0.257	-1.399	-0.686	-3.149	-	2.174	-	2.034
Denmark	EU12	-0.539	-0.234	-0.529	-	2.330	0.473	2.507	1.078
Ireland	EU12	-0.433	-0.977	-0.429	-0.990	-	0.589	-	0.522
Netherlands	EU12	-0.346	-0.183	-0.280	-	-	0.846	-	0.851
Germany	EU12	-0.262	-0.556	-0.197	-	2.276	1.065	2.411	1.661
EU15									
Austria	EU15	-0.626	-0.802	-0.489	-	1.830	0.391	1.867	0.772
Finland	EU15	-0.378	-0.924	-0.355	-0.914	1.139	1.464	-	1.053
Sweden	EU15	-0.161	-0.353	-0.108	-	1.044	1.595	0.774	2.105
EU25									
Hungary	EU25		-0.728	-0.695	-0.700		1.083	-	-
Latvia	EU25	-0.945	-0.877			-	1.379		
Lithuania	EU25								
Malta	EU25	-1.117	-1.112	-0.908	-1.644	-	0.775	-	0.792
Poland	EU25		-0.787	-0.424	-		-	-	1.840
Cyprus	EU25								
Non EU European countries									
Romania	NEU	-0.420	-0.725			-	-		
Norway	NEU	-0.198	-0.464	-0.165	-	-	0.357	-	0.632
Switzerland	NEU	-0.089	-0.146	-0.081	-	1.281	0.825	1.494	1.332
North, Central and Latin America									
Canada	NA	-0.667	-0.673	-0.713	-0.780	-	0.770	-	0.733
USA	NA	-0.150	-0.137	-	-0.132	0.965	1.395	0.897	1.479
Argentina	LA		-				2.046		
Chile	LA	-0.331	-0.148	-0.317	-0.249	0.991	1.573	1.106	1.817
Asia									
Japan	AS	-0.240	-0.241	-0.129	-	1.536	0.301	-	0.415
China	AS	-0.706	-3.164	-1.787	-3.804	-	3.112	-	4.085
Korea	AS	-3.713	-2.645	-3.583	-2.335	5.287	1.857	4.947	2.017
Oceania									
Australia ***									
New Zealand	OC		-0.731	-0.761	-0.552		2.200	3.055	2.433

* no imports into Greece from 1974 to 1977 and from 1980 to 1989;
** no imports into Spain before 1993/1994
*** negligible imports: most consumed bananas are produced domestically

How do the estimated elasticities compare with estimates of other researchers? FAO 2003 reports elasticities of export supply for a limited set of countries (Ecuador, Costa Rica, Colombia, Carribean producers, African producers and the Philippines) and find that the price

elasticity of US$ countries is reasonably high while it is negligible for non US$ countries. Our estimations clearly do not support this contention (see Table 3): we find significant non zero long run price elasticities for all countries, which are not systematically lower for non US$ producers. Some studies simply apply plausible values of elasticities with limited attempts to find empirical support for these elasticities[7]. Guyomard e.a. (1999) take values for the price elasticity of supply of 2 for dollar producers and a value of 1 for all other producers. Borrell (Borrell (1990)) uses price elasticity of 1 for favored suppliers and 3 for non-favored suppliers. The large difference is attributed to the limited availability of land. This contention is not supported by our estimations, despite its intuitive appeal. In support of the applied elasticities Borrell makes reference to a World Bank study (World Bank (1985)) and to a paper on Jamaica (Pollard and Graham (1985)).

With respect demand elasticities it is conjectured in the FAO study that both income and price elasticities will be lower in the major consuming countries relative to those of emerging markets due to saturation and demographic developments. Our estimation results indicate below unit income elasticity for the majority of European countries, Japan and Canada, while other countries have above unit income elasticity.

Estimated price elasticities of demand in European countries vary widely from close to –1 (Belgium) to around –0.25 (Denmark, The Netherlands). Kersten (1995) used an EU price elasticity of demand of –0.5. Guyomard e.a. (1999) take values for the price elasticity of demand ranging from –0.3 to –1.0. Borrell (1990) obtained price elasticities of demand from the earlier mentioned World Bank study (World Bank (1985)) and range from –0.4 to –1.0.

Our data suggest that countries whose banana export revenues are relatively small tend to have moderate production response, while the production response of countries whose banana export revenues are relatively large has a much wider dispersion, ranging from low to high. Export elasticities also do not vary systematically with groups of countries. We believe that supply elasticities depend on a large number of very different factors like contribution to export revenues, domestic demand, (domestic) transport costs, agricultural credit, alternative income opportunities, etc.

At this stage it should be noted that the size of supply and demand elasticities are a key determinant of the size and direction of eventual result of the simulations of the tariff only regime. Sensitivity analysis, also implemented by others (Borrell (1990)) suggests that the differences in outcome are large with different assumptions on supply and demand response. This justifies extensive investigations of export supply and import demand equations in order to obtain estimates of supply and demand elasticities with a substantial degree of accuracy.

4.2 Analysing margins between export and import

In this section we present an analysis of the margin between export unit values and import unit values. The FAO data on import and export of bananas do not identify imports by country of origin and exports by country of destination. As a result the export (import) unit values calculated on the basis of these data constitute a weighted average of the bilateral unit values with the share in total exports (imports) as weights. Variation in the export (import) unit value may be due to changes in the composition. For this reason we use bilateral trade data, i.e. data of exports including country of destination and imports including country of

[7] We believe that this is a sound procedure if the elasticities are in the same range of elasticities found elsewhere, and if a sensitivity analysis shows that the conclusions do not change fundamentally if other elasticities are selected.

origin. We will use bilateral trade data, obtained from COMTRADE (UNCTAD): these are available at the level of the commodity, starting in 1988 and extend to 2003.

Although we believe that bilateral trade data are potentially superior to aggregated data for the purpose of understanding trade margins, we are suspicious about the quality of the data. The poor quality of data on banana production, consumption, trade and prices is documented in almost any empirical study in the field of bananas. This motivates a number of precautionary measures in using these data, most notably the following two: in the calculation of unit values we have restricted the observations to the ones with values of above 100 (hence both above 100 times 1000 US$ if trade values are concerned, and above 100 Metric Tonnes). Further we experimented with restricting unit values to those unit values where exports (in quantities), reported by the exporting country, match the imports (in quantities) reported by the importing country.

We assume that export unit values are a reasonable proxy for FOB prices and import unit values are a reasonable proxy for CIF prices. Figure 4.1 shows medians[8] of the margin unit value (the difference between export unit values and import unit values) for US dollar producers to various destinations. From the Figure it is clear that unit margins for exporting to the EU12 (EU15) are much higher relative to all other destinations. Unit margins of exports to nearby locations like the 10 EU accession countries, for example, are on a much lower level: averaged over the years the unit costs are around 0.34 US$ cents per kg, and only 0.14 US$ cents for EU accession countries. This possibly and partly reflects quota rent[9] and the costs of export licenses, purchased from ACP operators[10]. Further we note that unit margins of export to Asia is slightly higher: this should be attributed to transports costs.

In order to investigate the margin unit value quantitatively we have estimated a very simple model that explains the margin unit value. This model assumes that the difference between export and import unit values should be attributed to the countries of origin (the exporting countries), to the countries of destination (the importing countries) and a number of other variables, most notably the distance between importing and exporting countries. Specifically we have estimated the following equation:

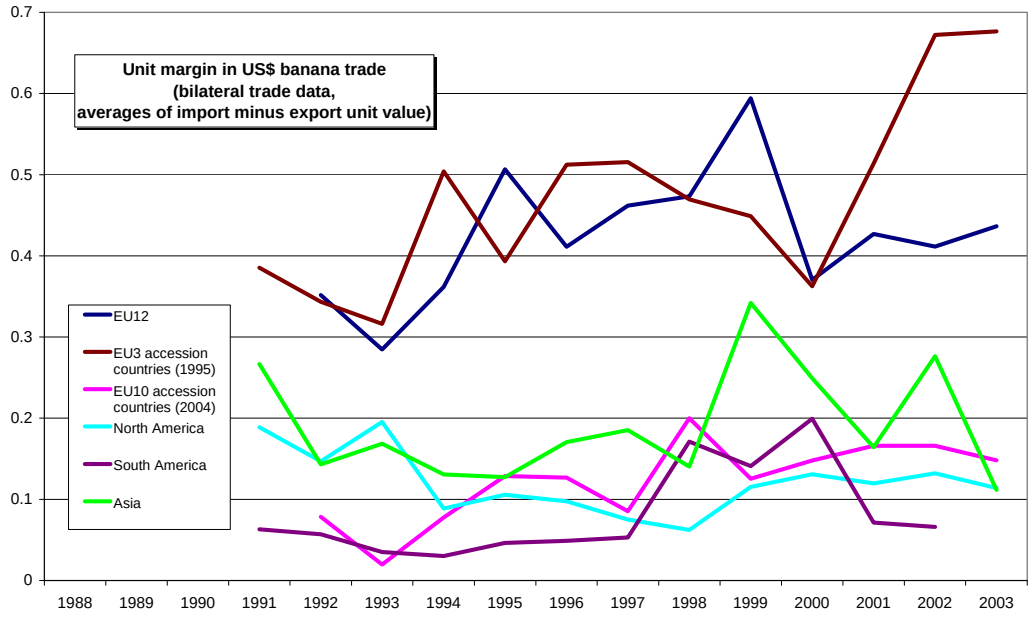
$$MARGUV_{jkt} = \gamma_0 + \gamma_{1j} D(\text{exporting country}) + \gamma_{2k} D(\text{importing country}) + \gamma_3 DISTANCE_{jk}$$

[8] We have used medians in stead of averages to control for extreme values which are due to measurement error.

[9] Quota rent reflects the premium that exporters receive above unrestricted equilibrium price.

[10] Part the dollar quotas is allocated to ACP producers and operators. Selling these quota licenses allowed these operators to benefit from the quota rent. Van de Kasteele claims that insufficient quota allocation and resulting active trade in licenses has generated an additional cost of 7-8US$ per box, which is equivalent to 0.38-0.44 US$ cents per kg (1 box is 18.2 kg).

Figure 4.1 Unit margins in banana trade



Since the full estimation outcome is rather lengthy we have presented below a limited version of the estimation outcome (excluding export country dummies and year dummies). The dependent variable is unit margin between export unit values of country of origin and import unit values of country of destination, in US$ cents, annual data, 1993-2002.

Table 4.7 Estimation results for unit margins

Distance	0.02 (5.7)
EU15 (importers)	0.23 (6.4)
Other Europe (importers)	0.32 (7.0)
North American (importers)	0.07 (2.0)
Asia(exporters)	0.14 (2.8)
Constant	0.05 (0.8)

No. of observations = 916; F(46, 869) = 13.27; Prob > F = 0.0000
R-squared = 0.4127 Adj R-squared = 0.3816 Root MSE =.14349

The results indicate that the unit margin is much and significantly larger for EU15 countries (0.23 US$ cents) and "Other European Countries", Switzerland and Norway (0.32 US$ cents). Even relative to imports to North America (mainly US) this is the case. We believe, as mentioned, above that this premium should be attributed to the quota rent and the cost of licenses purchased from ACP operators. Further we note that the estimation results suggest unit transport cost of 0.2 US$ cents per 1000 knots.

The estimation result may be used to get an approximate quantification of unit transport costs for different trade flows. The table below summarizes average per unit transport costs for different blocks of origin and destination. Please note that this table is not more than a linear transformation of (average) distances.

Table 4.8 Unit direct transport cost between blocks $/kg				
	EU25	NA	CLA	AS
European producers	0.00			
ACP Caribbean	0.09	0.03	0.11	0.21
ACP Africa	0.07	0.09	0.08-0.14	0.22
Colombia	0.10	0.04	0.10	0.21
Other CLA (US$)	0.11	0.05	0.04-0.11	0.16-0.21
ASIA	0.16-0.20	0.13	0.20	0.03

4.3 Formalising a partial equilibrium model

The objective of this project is to evaluate different specifications of the tariff only EU import regime, which is planned to be put in place in 2006, and to compare the various modalities of the tariff only regime with the pre2006 tariff quota regime. In order to do this we have constructed a single commodity partial equilibrium model of the world banana market that allows us to simulate a variety of tariff regimes. The model identifies seven exporting blocks and seven importing blocks:

Exporting blocks	**Countries**
Colombia	Colombia
Other CLA US$ exporters	Ecuador, Costa Rica, Panama, Guatemala etc.
Asian exporters	Philippines, Malaysia, China, Thailand, Australia, etc.
African ACP exporters	Cote d'Ivoire, Cameroon, Equatorial Guinea, etc.
Caribbean ACP exporters	Jamaica, Dominican Republic, etc.
European producers	Guadeloupe, Martinique, Spain (Canarian Islands), Portugal (Madeira) and Greece (Crete)
Rest of world exporters	South Africa, Turkey and Israel

Importing blocks	**Countries**
EU15	European Union (15 member countries)
EU10acc	ten accession countries 2004: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, Cyprus & Malta)
Other Europe	Norway, Switzerland, Iceland, non EU Eastern European countries (Romania, Bulgaria), Russia, Turkey, North Africa (Algeria, Tunisia, Morocco and Egypt)
North America	USA, Canada,
Central & Latin America	Argentina, Chile, Uruquay etc.
Asia	Japan, China, Korea, New Zealand, Near East, etc.
Rest of World importers	South Africa, other African countries

The following trade matrix, constructed on the basis of bilateral country level COMTRADE data, quantifies the relationships between the exporting and importing countries. Total trade in bananas is 13 million tonnes in 2000-2002, of which 4.3 million is imported into the EU15, 4.5 million into North America (mainly US), 2.0 million into Asia (mainly Japan, China), 1.1 into Other European countries (mainly Norway, Switzerland and Russia). The trade matrix shows that the EU15 imports above 70% from Central & Latin American dollar exporters, around 20% from ACP countries, and around 7% from European producers. Both the 10 EU accession countries, the remaining European countries, North, Central & Latin America import close to 100% from Central & Latin American dollar exporters. In Asia the situation is entirely different: more than 70% of the imports is supplied by Asia itself (mainly the Philippines), while the remainder is supplied by Central & Latin America. European producers and ACP producers export only to the EU, while Central & Latin American producers export mainly to the North America (44%), the EU15 (27%) and other European countries (12%), The Colombian export package is slightly more biased towards the EU and less towards other European countries.

Table 4.9 Banana trade flows by major import and export blocks
(averages over the years 2000 to 2002, data reported by importers, in MT)

	EU15	EU10a	Other Europe	NA	CLA	AS	
European producers	291500	204	3063	14	32	18	294831
ACP Caribbean	323515	0	3294	6980	4447	1619	339855
ACP Africa	544873	5544	131	0	0	18	572717
Colombia	784224	82340	99691	737103	2	47268	1750629
Other CLA	2331611	339500	1072778	3774680	611195	509815	8639579
ASIA	378	148	12074	1758	2	1438879	1453239
	4278156	427737	1191032	4520541	615678	2003357	13058668

	EU15	EU10a	Other Europe	NA	CLA	AS
European producers	6.8%	0.0%	0.3%	0.0%	0.0%	0.0%
ACP Caribbean	7.6%	0.0%	0.3%	0.2%	0.7%	0.1%
ACP Africa	12.7%	1.3%	0.0%	0.0%	0.0%	0.0%
Colombia	18.3%	19.3%	8.4%	16.3%	0.0%	2.4%
Other CLA (US$)	54.5%	79.4%	90.1%	83.5%	99.3%	25.4%
ASIA	0.0%	0.0%	1.0%	0.0%	0.0%	71.8%

	EU15	EU10a	Other Europe	NA	CLA	AS
European producers	98.9%	0.1%	1.0%	0.0%	0.0%	0.0%
ACP Caribbean	95.2%	0.0%	1.0%	2.1%	1.3%	0.5%
ACP Africa	95.1%	1.0%	0.0%	0.0%	0.0%	0.0%
Colombia	44.8%	4.7%	5.7%	42.1%	0.0%	2.7%
Other CLA	27.0%	3.9%	12.4%	43.7%	7.1%	5.9%
ASIA	0.0%	0.0%	0.8%	0.1%	0.0%	99.0%

Source: calculations on the basis of COMTRADE data

The Central and Latin American countries clearly dominate the world market of bananas. Nevertheless, there appears to be some market segmentation: the Asian market is largely supplied by Asian producers, and mainly by the Philippines, and only for a limited share by Central and Latin American producers. Also the low production costs of the Asian producers (see evidence in earlier sections) and the (difference in) transportation costs[11] suggest that it may be difficult for Central and Latin American producers to increase their market share in Asia.

Our simulation model that will be used for investigating the tariff only import regime runs as follows:

$$s_{j,k} = \alpha_{0,j} + \alpha_{1,j,k}\,\mathrm{TREND} + \alpha_{2,j,k}\,\mathrm{PRICE}^{S}{}_{j,k} \qquad (1)$$

where

s_{jk} = export supply by export block j to import block k[12]
TREND = trend variable

[11] Average and median margin unit costs of US$ exporters, averaged over the years 1991-2003, are around twice as high for Asia relative to North America.

[12] j = African ACP exporting countries (ACPAfr), Carribbean ACP exporting countries (ACPCar), Colombia (Col), Other Central and Latin American exporting countries (OthCLA), Asian exporting countries (Asia); and k = European Union, 25 members (EU25), other European countries (Oth Eur), North American countries (NA), Central and Latin American importing countries (CLA), Asian importing countries (Asia).

$PRICE^S$= export supply price of export block j to import block k

$$PRICE^S_{j,k} = PRICE^* - c_j - c_{jk} \quad \text{if } j \neq ACP \tag{2}$$

where
c_j = export country j specific unit cost of export supply
c_{jk} = unit transport cost of export supply from country j to country k

$$s_j = \sum_k s_{jk} \tag{3}$$

Since supply response is estimated for exporting countries (and not for the different bilateral trade flows that add up to country j's total export supply) we may reformulate this as follows:

$$s_j = \alpha_{0,j} + \alpha_{1,j} TREND + \alpha_{2,j} PRICE^S_j \tag{1'}$$

and

$$PRICE^S_j = PRICE^* - c_j - wtc_j \quad \text{if } j \neq ACP \tag{2'}$$

where
wtc_j = export country j specific unit transport cost weigthed with export shares

ACP countries have a tariff preference over non ACP countries if a tariff is imposed by the EU25, and consequently the supply price of ACP countries differs from the supply price of non ACP countries

$$PRICE^S_{j,k} = .PRICE^* - c_j - c_{jk} + t \quad \text{if } j = ACP \text{ and } k = EU25 \tag{4}$$

Because ACP countries mainly export to the European Union, we may approximate this with

$$PRICE^S_j = PRICE^* - c_j - wtc_j + t \quad \text{if } j = ACP \tag{4'}$$

The import demand is determined by per capita GDP and the real price of bananas:

$$d_k = \beta_{0,k} + \beta_{1,k} GDPpercapita + \beta_{2,k} PRICE^D_k \tag{5}$$

where

d_k	= import demand from country k
GDPpercapita	= per capita gross domestic product / income
$PRICE^D$	= import demand price

$$PRICE^D_k = PRICE^* + c_k + t \quad \text{if } k = EU25 \tag{6}$$
$$PRICE^D_k = PRICE^* + c_k \text{ if } k \neq EU25$$

where
c_k = import country k specific unit cost of import demand
t = (the unit) import tariff of the EU25

$$S = \sum_j s_j \tag{7}$$

$$D = \sum_k d_k \tag{8}$$

$$S \equiv D \tag{9}$$

Equation(s) (1) to (3) establish the export supply block of the model. The elasticities in equations (1) are based on the estimations reported in the start of this chapter. Export supply is assumed to depend on a trend variable and on export supply prices. Export unit values are assumed to be the relevant prices to estimate export supply response. Equation (2) connects the export unit values to the market equilibrium price, by assuming a export country specific costs and transport costs (the latter both export country and import country specific). Equations(s) (4) and (5) establish the import demand block of the model. The elasticities in these equations are, again, based on the estimations reported in the start of this chapter. Equation (5) specifies the tariff only import regime of the EU after 2006, and equation (6) and (6') specify the zero tariff preference for ACP countries. Equation (7) and (8) define aggregate export supply and import demand, and equation (9) establishes market equilibrium.

4.4 Simulations

The simulation model distinguishes five export supply blocks (ACP Africa, ACP Caribbean, Colombia, Other Central & Latin American countries and Asia) and five import blocks (EU25, Other Europe, North America, Central and Latin America, and Asia). The starting point of the model needs to be the market situation prior to 2006, but as close to 2006 as possible. In particular the position of the ACP countries in these years is important since the tariff only regime requires a similar level of protection to producers in these countries. Hence we will calibrate the model on the most recent data that we have, data that we still consider to be reliable. Since most recent reliable data are from 2001 and 2002 we have used the observations of 2001 and 2002 as starting values. Hence, prices and quantities are calibrated on their 2001 and 2002 levels. All output is expressed in constant 2002 prices. At this stage we did not attempt to model exchange rate developments and, hence, the 2002 exchange rates are fixed for the simulation period. We study the impact of the introduction of a tariff only regime in 2003 (or equivalently we assume that our values for 2001 and 2002 are the values of 2004 and 2005 because we believe that the construction of data for 2003 to 2005 introduces further error in the simulations).

Each block has its own price, either export supply or import demand, but there is one world market equilibrium price: block prices are connected to the world market equilibrium price through a constant mark-up (either negative or positive), hence:

p(import demand from block i) = p(equilibrium) + margin(demand block i) and

p(export supply from block j) = p(equilibrium) - margin(supply block j)

These margins are also calibrated on the basis of the 2001 and 2002 export and import unit values.

For simulation of the tariff only regime we need to specify the import tariff, e.g. 75US$ per ton. Additionally we need to adjust the EU import demand margin for the unit quota rent, since this margin is based on historical series during which a quota rent is earned. It is assumed that the unit quota rent moves around 0.10 to 0.15 US$. Finally, we are controlling for the preferential treatment of ACP countries by adjusting the cost mark up of the ACP exporters, so that their export supply price is exempted from the EU import tariff:

this appears to be an acceptable procedure since almost all banana exports by ACP countries is exported to the EU.

Supply response and demand response functions, estimated with error correction mechanisms, distinguish both long run and short run and specify the dynamic path of supply and demand of the different blocks to equilibrium. The following long run elasticities are obtained from direct estimation on block level[13]:

Export supply elasticities		**Import demand elasticities**	
ACP African	0.603	EU25	-0.517
ACP Carribean	1.402	Other Europe	-0.288
Colombia	0.337	North America	-0.318
Other Central & Latin America	0.418	Central & Latin America	-0.158
Asia	0.933	Asia	-0.566

Development of per capita gross domestic income in the different import blocks is extrapolated using an appropriate polynomial of time. A complete overview of the model, also including the program code is available

[13] The weighted sum of elasticities obtained from country level estimations (see Section above) comes fairly close to the ones we find by block level estimation. Therefore we have decided to use the elasticities obtained through block-level estimation. Simulations run with elasticities obtained as the weighted sum of elasticities from country level estimations are available on request.

5. Calculation of future scenarios

The ingredients for the calculations have now been assembled. Representative of the prices on the demand side (inclusive of quota rents, but excluding the tariff) can be the import unit value of bananas into the EU. Representative for the FOB prices is the average export unit value of the dollar zone countries.

We use the average values for the last three years that are available at this moment. These are 2001-2003 for import values and 2000-2002 for the export unit values.

Imports into the EU from dollar zone countries stood at 2537 thousand tons. ACP countries provided 747 thousand tons, EU producers 770 thousand tons, totaling 4055 thousand tons.
Quotas allocated to ACP countries (C-quota) were 750 kilotons, and to other importers 2630 thousand tons (2530 in 2001). Quotas plus production (770) equals therefore 4130, close enough to the average imports to assume the quota were binding.

Starting from this position, we shall first calculate what prices and quantities would be if neither quotas nor any tariff would be applied to banana imports into the EU. Thereafter, we shall gradually increase the tariff for dollar producers and see the implications.

An important step is to model the relationships between the various prices. Starting from the EU-price at import for shipments from Latin America, the tariff is added in moving to the consumers. The same price, in principle, applies to bananas coming from ACP states, but no tariff is charged. Yet, quota rents may apply, and they can be higher for ACP bananas, as these enjoy the tariff preference, than for non-ACP bananas. Rents, however, can only occur if access to the market is restricted. The Figure 5.1 below shows how total ACP supply related to the quota allocated to the ACP imports. In particular the two most recent years show how quotas actually become more and more binding with the lowering of quotas and increasing supply.
Yet the Figure hides the differences between countries. From 1993 until 1999, country quotas were in place, granting for example Cameroon and Côte d'Ivoire tariff-free imports to a maximum of 162 500 tons each. This was a binding constraint at that time for both countries, and as soon as the country quota were lifted they expanded their exports to the EU.

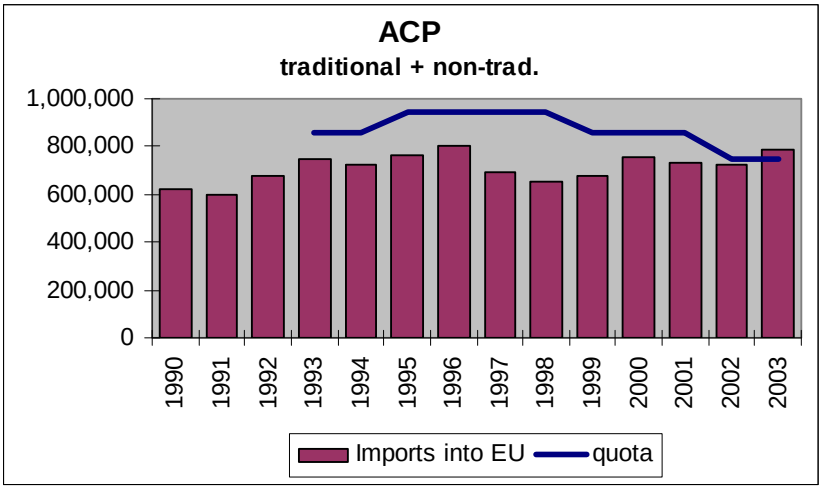


Figure 5.1 Imports from ACP countries and the relevant quotas.

Binding quotas imply rents[14]. As these are related to import quantities, they should show up in the CIF prices. If they are not transmitted to producers, they show up in the margin between FOB and CIF prices.

5.1 Price relationships

The conclusion of the foregoing discussion is that there is reason to believe that rents not only occur in the margins FOB-to-CIF of Latin American exports, but also in those of African exports to the EU. And the implication is that when the quotas are abolished, the rents and therefore these margins go down.

The following Table makes clear how observed prices (in bold) in the statistical data sources are related.

Table 5.1 Prices CIF EU and FOB producing regions

EU import price including tariff		**65.5**	
	Dollar countries	ACP Africa	ACP Caribbean
Tariff	7.5	0	0
differential rents/costs in EU		6.5	-2.5
EU import Unit Values	**58**	**59**	**68**
international quota rents	10	12	0
transport costs	20	20	20
FOB prices	**28**	**27**	**48**

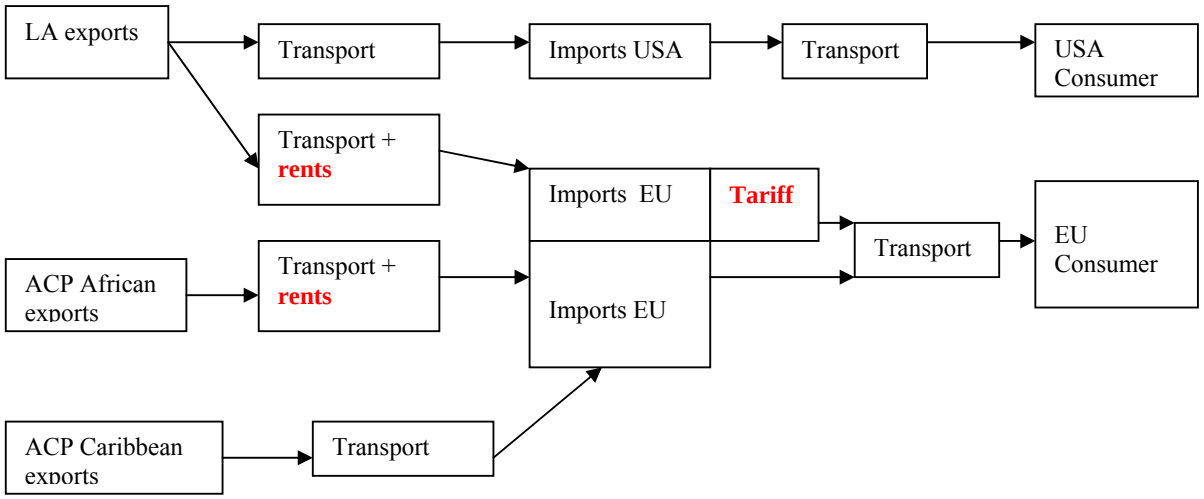
If we were to take the observed import and export unit values for facts, and if we assume transport costs not to differ substantially between the various origins, there are likely to be rents on the shipments from ACP Africa and Latin America in the order of size of 10 to 12 euro cents per kg.

If, therefore, the quota system is abolished, these rents will disappear. If they are "replaced" by a tariff on imports from some origins, the tariff will show up in the margin between Import Unit Value from these origins and the wholesale price. This may affect the unit import value of these origins and the FOB prices.

The following relationships are relevant.

[14] And even below the quota levels, they may generate rents to the owners of the licenses if these are left unused

A. Present system



The diagram shows how Latin American exports have two main destinations, one is the USA the other the EU (not shown is Asia, but it is included in the model). Arbitrage between the two destinations secures equality of the prices FOB for both destinations. Getting from the LA FOB price to the EU consumer price requires adding transport cost to EU, rents of the quotas incorporated in the margin, the tariff and other domestic transport and retailing costs. The EU consumer can choose between bananas from Latin America or ACP countries, and prices should more or less be equal at consumer level. Subtract from these consumer prices again the domestic transport costs and the international transport costs to Caribbean, and one arrives at FOB ACP Caribbean prices. To get ACP African prices, not just transport costs should be subtracted, but also quota rents on the African imports into the EU. Adding values to these relationships we have

Table 5.2 CIF prices, costs and FOB prices

In euro or US cent per kg

	USA	**EU**		
cons price	110	155		
Costs	68	90	96	87
Tariff		7.5		
CIF price	42	58	59	68
Rent		10	12	
Costs	14	20	20	20
FOB price	28		27	48
	LA		**ACP-Af**	**ACP-Car**

Wholesale prices prevailing, on average in the EU15 in 2002, were around 155 euro cents per kg. At the recorded CIF prices, the margins for retailing the bananas from the various origins amount to between 87 and 96 cents (if the wholesale prices would be the same for all origins, which they are not).

In the new system, the rents would disappear, but the tariff may change. The typical situation where the same price would still hold for the ACP African countries could mechanically be obtained by keeping all cost items the same, and calculating the necessary changes in other

variables (the prices other than FOB ACP Africa) to achieve this. This can be done by putting the price of 27 for ACP African countries at the bottom, adding the transport costs (kept at 20) to this price to arrive at CIF EU prices equal to 47. Add the domestic costs of 96 to arrive at wholesale prices of 143 cents per kg. From this wholesale price we can go down to the corresponding FOB prices in ACP-Caribbean, and (with an assumption on the tariff) to the FOB Latin America. From the latter, we can calculate what the price in the USA should be.
The results are shown in Table 5.3.

Table 5.3 CIF prices, costs, FOB prices with tariff of X and FOB prices in ACP Africa equal to 27

In euro or US cent per kg

	USA	EU		
cons price	115-X	143		
Costs	68	90	96	87
Tariff		X		
CIF price	47-X	53-X	47	56
Rent		0	0	
Costs	14	20	20	20
FOB price	33-X		**27**	36
	LA		**ACP-Af**	**ACP-Car**

Starting from 27 cents/kg FOB ACP Africa, and keeping costs the same, consumer price in EU could fall to 143 cents. The implication is, however, that prices facing ACP Caribbean producers would fall too, namely from 48 to 36 cents, the difference being equal to the rent on African supplies which is not (yet) on Caribbean supplies.
At a tariff on Latin American supplies to the EU, equal to X, the FOB price in Latin America may fall to 33-X. Hence for X=5, FOB prices remain the same; for X=7.5, FOB prices go down a bit. The same tariff X is found to affect the USA import and USA consumer price.

This approach is not consistent with market behaviour however. As can be easily observed, the lower consumer prices should lead to higher demand for bananas, but as FOB prices in ACP countries do not rise, and those in LA countries fall for X>5, the higher demand in the EU cannot be met. A tariff below 5 cents may help, as this triggers more production, but the outcome depends on supply and demand elasticities.

5.2 Modeling results

This is where the estimated elasticities come in. Chapter 4 gave the background for the estimated elasticities, how these were derived and how they are put together in a consistent framework for simulation purposes.

We have used the following basic elements for the standard case believed to be representative of the situation around 2005.

Table 5.4 Basis for the calculations

Standard case			
	FOB prices	Exports	Elasticity
	€ cent	1000 t	
ACP-Africa	**25**	**500**	**.60**
ACP-Caribbean	**44**	**350**	**1.40**
Colombia	**28**	**1400**	**0.34**
Other C&LA	**24**	**8200**	**.42**
Asia	**17**	**1750**	**.93**
Total exports		**12200**	
Tariff	**7.5**		
Price CIF	**56**		
	CIF prices	Imports	
NA demand	**32**	**4500**	**-0.32**
EU15	**56**	**3900**	**-0.52**
Other Eur	**40**	**1000**	**-0.29**
Asia	**41**	**2400**	**-0.57**
LA imports	**28**	**400**	**-0.16**
Total imports		**12200**	

FOB prices in Colombia and other Central and Latin America and import unit values in the EU are linked through a margin consisting of 32 cents (28 for Colombia) including 10 cents quota rent. EU internal prices are higher by the tariff and other costs, which latter are neglected here.
Prices prevailing FOB in ACP African countries are derived from the EU-internal price. From this internal price no tariff is deducted, but transport costs of 21 cents and a rent of 10 cents are. This brings total international margin at 31 cents. To this, a EU-domestic price differential must be added of 7.5 cents, so that the ACP-African FOB prices, given the EU internal price of 63.5 arrives at a level of 25, as is observed for average African ACP.
For ACP Caribbean a similar procedure is followed but without the incorporation of a rent, and costs again equal to 19.5 cents per kg, bringing their FOB prices at a much higher level than those in Africa.
Asian prices are linked to the Latin American prices with a difference of 7 cents. North-American prices are 8 cents higher than the export prices from Latin America.

Crucial element in the simulation is the hypothesis (which we believe to be true) that the quota rent is incorporated into the premium on exports to the EU. Reducing the quota restriction amounts to reducing the CIF price at a given level of the FOB price. The link between what happens with the CIF price and the quota is provided by the elasticity of demand.

A comparison of amounts consumed in the EU15 in 1992 and 1994 shows that the quota constrained demand in the order of 10%, which is equal to the effect of a price increase by 19% or one fifth. At the import unit value of 59 cents, this means that 12 cents are quota rents per kg. Hence, abolishment of the quota would be tantamount to a reduction of the EU margins between FOB and CIF for both the Lain American countries and the ACP African countries by a rounded 10 cents. At given EU prices, this would of course increase FOB prices in Latin America, but even more in the African ACP countries, whose prices are fully dictated by the EU market.

The following results are obtained.

Table 5.5 Simulation results

		Basis	1	2	3	4
Assumptions						
Tariff	€ct/kg	**7.5**	**0.0**	**7.5**	**15.0**	**23.0**
rent LA	€ct/kg	**10**	**0.0**	**0.0**	**0.0**	**0.0**
rent ACP Africa	€ct/kg	**10**	**0.0**	**0.0**	**0.0**	**0.0**
Results						
EU price cif+tariff	€ct/kg	**63.5**	48.4	54.7	61.1	68.0
FOB price LA	€ct/kg	**24.0**	26.4	25.2	24.1	23.0
ACP Africa production	1000 t	**500**	436	514	586	659
ACP Afr fob-prices	€ct/kg	**25.0**	19.9	26.2	32.6	39.5
ACP Afr Export value	€ 10^9	**13**	9	13	19	26
ACP Caribbean prod	1000 t	**350**	194	256	323	401
ACP Caribbean price	€ct/kg	**44.0**	28.9	35.2	41.6	48.5
ACP Carib. Export value	€ 10^9	**15**	6	9	13	19
Colombia prod	1000 t	**1400**	1440	1420	1401	1383
Other C&LA production	1000 t	**8200**	8536	8365	8209	8056
Implications						
EU25 import demand	1000 t	**3900**	4490	4216	3980	3764
LA X to EU25	1000 t	**3150**	3916	3519	3163	2818
Tariff revenues	€ 10^6	**236**	0	264	474	648

Table 5.5 shows the first results of the simulations for the situation in which no quota rents are enjoyed, while tariffs vary from 0 to €230 per ton.
The abolishment of the quota, and the concomitant licensing system, means that there would be free entry into the transport and import market into the EU. This is bound to lead to considerable cost savings, here estimated at 10 cents a kg (or €100/ton).
This is applied both to Africa and to the trade with Latin America, with the implication that producers in these countries are better off. Consumers, too, are better off, as producer prices and consumer prices come closer.
In the **first simulation (column 1)**, **with no intervention** whatsoever, the margin between producer and consumer prices falls to 22 cents, compared to nearly 40 cents in the base scenario. Initially, consumer prices may fall to (63.5-10-7.5=) 46 cents. After adjustment of the world market prices to restore equilibrium, this settles somewhat higher, at 48.4 cents. Producers in Latin America benefit substantially, due to higher prices (26.4 in stead of 24 cents) and more production. Their African colleagues, though enjoying the removal of the quota rent (+10 cents) suffer from the reduction in their reference price. The margin with the EU price is no longer 38.5 cents, but only 28.5, but this is not enough to compensate for the reduction in EU prices. Producers in the Caribbean do not benefit from the removal of quota-rents, and suffer from the lower EU price directly. Their prices fall below 30 cents, which, by the way, is still not low enough to make exports to the USA an attractive alternative.

Higher levels of the tariff (columns 2-4), in the scenarios where quota rents no longer occur, improve the position of the ACP producers and are worse for the Latin American producers. Roughly, for every 7 cents that is added to the tariff, LA prices fall by one cent, while ACP prices increase by 6 cents. African producers would be as well off as in the basic scenario, as soon as the tariff reaches 6.5 cents, while Caribbean producer prices would only be equal to the base price for a tariff in the order of 18 cents. A tariff of 23 cents leads to better incomes for *all* ACP producers, and less revenue for the other producers in the world.

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The translation of the Doha waiver text (‘*any rebinding of the EC-tariff on bananas under the relevant GATT Article XXVIII procedures should result in at least maintaining total market*

access for MFN banana suppliers' (source WT/MIN(01)/15, 14 November 2001)) into the model was done by investigating what tariff for the non-ACP countries would lead to an fob price for these countries similar to the base scenario. In the model the base scenario had a price of €240 per ton fob for Latin American producers. To have **the same fob price** (and therefore, the same production in Latin America), a tariff of €154/ton results from the model calculations.
At this tariff, exports from Latin America to the EU will likely be somewhat below the original exports to the EU (3144 in stead of 3150 as in the base scenario), because the exports by ACP countries are simulated to increase beyond the original quota of 750,000 tonnes. In this simulation, the ACP producers in Africa will expand their production drastically (from 500 to 590), while the producers in the Caribbean will decrease their production (from 350 to 327). EU CIF+tariff prices will be somewhat lower (€614 in stead of €635) so that total EU demand will rise to 3968 tons.

Alternatively, one could simulate what tariff should apply to assure that the Latin American countries have **the same import-market share** in the EU market, as they have under the current regime (in the base scenario: 3150 out of 3900). To this end, we simulate the same regime, *i.e.* we remove the quota rents for Latin America and for the ACP, and look for the tariff that would grant Latin America a share in the EU-imports equal to 80.8%. In doing so, we assume that from the Caribbean production (in the basis 350 thousand tons), 5/7 will go to the EU (in the basis 250 000 tons).
The resulting tariff should be lower than the €157/ton simulated earlier. Indeed it comes at **€126/ton**. At this level, the share of the Latin American countries in the EU import market is again 80.8%. F.o.b. prices would be slightly higher (from €240 to €244). LA exports to the EU-25 would be 3272 000 tons, that is some 122 000 tons higher than the base scenario.

Finally, a tariff that would lead to **the same quantity of imports** into the EU from Latin America would be a tariff of **€153/ton**, as this would lead to imports from Latin America of again the 3150 tons, assumed for the base scenario.

Table 5.6 provides another set of simulations. Here we simulated what would be **the exact tariff equivalent under various assumptions**. The first assumption was that there would be no response from ACP producers, but only from Latin American producers. This is tantamount to the simplistic calculation of the tariff equivalent. If we look for the tariff that clears the market at the old price, obviously we arrive at 10+7.5=17.5 cents for the tariff, being the sum of the old tariff and the old quota-rent. **Column (10).**

If, however, we let the ACP producers respond to the removal of the quota rent, and still want to raise the tariff to a level where the original world market price would apply, we need only raise the tariff to 15.4, in stead of the 17.5 in the simple calculation (see **column 11**). This is the empirical equivalent of what was shown in Figure 3.2: for the establishment of the tariff equivalent, it matters what is changing for the other producers.

The simulation reported in **column (12)** goes one step further. Here we assume that a tariff is chosen so as to make the African ACP producers as well off as in the base scenario. Now a tariff of only 6.1 cents is needed.
Column (13), finally, investigates the question what would happen if the alleged reduction in quota rents in the African trade does not materialize. Suppose, only a reduction by 5 cents would be possible. In this case, a higher tariff is needed to help African producers: 12 cents per kg, or €120/ton. In the last two scenarios, Caribbean producers are not well off. Their revenues dwindle, as the producer prices fall along with EU prices.

The last line of the Tables provides information on the revenues of the EU from collecting the tariff. While in the standard scenario these amount to €236 million, they shoot up to over €600 million for a tariff of 23 cents.

Table 5.6 Simulation results (cont'd)

		Basis	10	11	12	13
Assumptions						
Tariff	€ct/kg	**7.5**	**17.5**	**15.4**	**6.1**	**12.0**
rent LA	€ct/kg	**10**	**0.0**	**0.0**	**0.0**	**0.0**
rent ACP Africa	€ct/kg	**10**	**na**	**0.0**	**0.0**	**5.0**
Results						
EU price cif+tariff	€ct/kg	**63.5**	63.5	61.4	53.5	58.6
FOB price LA	€ct/kg	**24.0**	24.0	**24.0****	25.4	24.6
ACP Africa production	1000 t	**500**	**500***	590	**500****	**502****
ACP Afr fob-prices	€ct/kg	**25.0**	25.0	32.9	25.0	25.1
ACP Afr Export value	€ 10^9	**13**	13	19	12	13
ACP Caribbean prod	1000 t	**350**	**350***	327	244	297
ACP Caribbean price	€ct/kg	**44.0**	44.0	41.9	34.0	39.1
ACP Carib. Export value	€ 10^9	**15**	15	14	8	12
Colombia prod	1000 t	**1400**	1400	1400	1423	1411
Oter C&LA production	1000 t	**8200**	8200	8200	8395	8290
Implications						
EU25 import demand	1000 t	**3900**	3900	3968	4264	4065
LA X to EU25	1000 t	**3150**	3150	3144	3590	3351
Tariff revenues	€ 10^6	**236**	551	485	219	402

* fixed; **: targeted

5.3 Conclusions

The empirical investigations led us to believe that quota rents were incorporated in the international margins. These quota rents have varied over the years and were on average around 8 euro cents. This order of size is commensurate with the comparison over time, with the comparison over groups (ACP producers and Latin American producers) and with the changes that have occurred in the early period of the CMOB. These latter actually suggested a slightly higher amount, around 12 cents.
In the simulations we have taken 10 cents, both for the margins between EU and Latin America, and for those between EU and Africa. This amount is therefore substantially below the quota rent that is implicit in the European Commissioner's proposal. The Commission proposes a new tariff of €230/ton, implying a quota rent of €155/ton. We do not see the evidence in recent years for this size of the rent.

The introduction of a removal of a binding quota for the Africa producers, or at least a rent, changes the calculations of tariffs that are equivalent to the removal of the other quota, that on the trade with Latin America.
The simple approach is to add the quota rent and the ruling tariff of 7.5 to yield a new tariff of 17.5 cents. This would apply if no supply response were forthcoming from the ACP producers. Now that there is such response, the mere removal of their (binding) quota or the liberalisation of their trade would lead to a supply response. Taking this into account reduces the pure tariff equivalent to 15.4 cents. This tariff is called 'pure' as it is the tariff that restores the old price, in spite of the removal of both quotas. This is not normally the aim of a tariff equivalent. Maintaining equivalent access for the ACP producers to the EU market is among the explicit aims of the tariff setting. This would already be achieved at a tariff of 6 cents, as this provides the African producers with the same incentives as the original price. The Caribbean producers would not benefit, but would lose trade in this case, while the Latin American producers would still see their trade enhanced. Securing access to the EU of an equivalent amount as before (Adding all ACP producers) would require a tariff of around 12 cents or €120 per ton. In this case, Caribbean producers would still not benefit as much as their African colleagues.

Simulations with other parameter values, such as higher supply elasticities (not reported) show that these conclusions are not very sensitive to the elasticities chosen. Simulations with an attenuated form of quota rent removal, namely only 5 cents per kg, showed that in this case the effects for the African and Latin American producers are somewhat more unfavourable.

Latin American producers, and Colombia as one of them, are likely to be hurt by any tariff that is higher than €150 euro per ton.

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Appendix A relevant GATT article XXVIII

XXIX. Article XXVIII

A. Text of Article XXVIII

Article XXVIII*: Modification of Schedules

1. On the first day of each three-year period, the first period beginning on 1 January 1958 (or on the first day of any other period* that may be specified by the CONTRACTING PARTIES by two-thirds of the votes cast) a contracting party (hereafter in this Article referred to as the "applicant contracting party") may, by negotiation and agreement with any contracting party with which such concession was initially negotiated and with any other contracting party determined by the CONTRACTING PARTIES to have a principal supplying interest* (which two preceding categories of contracting parties, together with the applicant contracting party, are in this Article hereinafter referred to as the "contracting parties primarily concerned"), and subject to consultation with any other contracting party determined by the CONTRACTING PARTIES to have a substantial interest* in such concession, modify or withdraw a concession* included in the appropriate schedule annexed to this Agreement.

2. In such negotiations and agreement, which may include provision for compensatory adjustment with respect to other products, the contracting parties concerned shall endeavour to maintain a general level of reciprocal and mutually advantageous concessions not less favourable to trade than that provided for in this Agreement prior to such negotiations.

3. *(a)* If agreement between the contracting parties primarily concerned cannot be reached before 1 January 1958 or before the expiration of a period envisaged in paragraph 1 of this Article, the contracting party which proposes to modify or withdraw the concession shall, nevertheless, be free to do so and if such action is taken any contracting party with which such concession was initially negotiated, any contracting party determined under paragraph 1 to have a principal supplying interest and any contracting party determined under paragraph 1 to have a substantial interest shall then be free not later than six months after such action is taken, to withdraw, upon the expiration of thirty days from the day on which written notice of such withdrawal is received by the CONTRACTING PARTIES, substantially equivalent concessions initially negotiated with the applicant contracting party.

(b) If agreement between the contracting parties primarily concerned is reached but any other contracting party determined under paragraph 1 of this Article to have a substantial interest is not satisfied, such other contracting party shall be free, not later than six months after action under such agreement is taken, to withdraw, upon the expiration of thirty days from the day on which written notice of such withdrawal is received by the CONTRACTING PARTIES, substantially equivalent concessions initially negotiated with the applicant contracting party.

4. The CONTRACTING PARTIES may, at any time, in special circumstances, authorize* a contracting party to enter into negotiations for modification or withdrawal of a concession included in the appropriate Schedule annexed to this Agreement subject to the following procedures and conditions:

(a) Such negotiations* and any related consultations shall be conducted in accordance with the provisions of paragraph 1 and 2 of this Article.

(b) If agreement between the contracting parties primarily concerned is reached in the negotiations, the provisions of paragraph 3 *(b)* of this Article shall apply.

(c) If agreement between the contracting parties primarily concerned is not reached within a period of sixty days* after negotiations have been authorized, or within such longer period as the CONTRACTING PARTIES may have prescribed, the applicant contracting party may refer the matter to the CONTRACTING PARTIES.

(d) Upon such reference, the CONTRACTING PARTIES shall promptly examine the matter and submit their views to the contracting parties primarily concerned with the aim of achieving a settlement. If a settlement is reached, the provisions of paragraph 3 *(b)* shall apply as if agreement between the contracting parties primarily concerned had been reached. If no settlement is reached between the contracting parties primarily concerned, the applicant contracting party shall be free to modify or withdraw the concession, unless the CONTRACTING PARTIES determine that the applicant contracting party has unreasonably failed to offer adequate compensation.* If such action is taken, any contracting party with which the concession was initially negotiated, any contracting party determined under paragraph 4 *(a)* to have a principal supplying interest and any contracting party determined under paragraph 4 *(a)* to have a substantial interest, shall be free, not later than six months after such action is taken, to modify or withdraw, upon the expiration of thirty days from the day on

which written notice of such withdrawal is received by the CONTRACTING PARTIES, substantially equivalent concessions initially negotiated with applicant contracting party.

5. Before 1 January 1958 and before the end of any period envisaged in paragraph 1 a contracting party may elect by notifying the CONTRACTING PARTIES to reserve the right, for the duration of the next period, to modify the appropriate Schedule in accordance with the procedures of paragraph 1 to 3. If a contracting party so elects, other contracting parties shall have the right, during the same period, to modify or withdraw, in accordance with the same procedures, concessions initially negotiated with that contracting party.

B. Text of *AD* Article XXVIII

***Ad* Article XXVIII**

The CONTRACTING PARTIES and each contracting party concerned should arrange to conduct the negotiations and consultations with the greatest possible secrecy in order to avoid premature disclosure of details of prospective tariff changes. The CONTRACTING PARTIES shall be informed immediately of all changes in national tariffs resulting from recourse to this Article.

Paragraph 1

1. If the CONTRACTING PARTIES specify a period other than a three-year period, a contracting party may act pursuant to paragraph 1 or paragraph 3 of Article XXVIII on the first day following the expiration of such other period and, unless the CONTRACTING PARTIES have again specified another period, subsequent periods will be three-year periods following the expiration of such specified period.

2. The provision that on 1 January 1958, and on other days determined pursuant to paragraph 1, a contracting party "may ... modify or withdraw a concession" means that on such day, and on the first day after the end of each period, the legal obligation of such contracting party under Article II is altered; it does not mean that the changes in its customs tariff should necessarily be made effective on that day. If a tariff change resulting from negotiations undertaken pursuant to this Article is delayed, the entry into force of any compensatory concessions may be similarly delayed.

3. Not earlier than six months, nor later than three months, prior to 1 January 1958, or to the termination date of any subsequent period, a contracting party wishing to modify or withdraw any concession embodied in the appropriate Schedule, should notify the CONTRACTING PARTIES to this effect. The CONTRACTING PARTIES shall then determine the contracting party or contracting parties with which the negotiations or consultations referred to in paragraph 1 shall take place. Any contracting party so determined shall participate in such negotiations or consultations with the applicant contracting party with the aim of reaching agreement before the end of the period. Any extension of the assured life of the Schedules shall relate to the Schedules as modified after such negotiations, in accordance with paragraphs 1, 2, and 3 of Article XXVIII. If the CONTRACTING PARTIES are arranging for multilateral tariff negotiations to take place within the period of six months before 1 January 1958, or before any other day determined pursuant to paragraph 1, they shall include in the arrangements for such negotiations suitable procedures for carrying out the negotiations referred to in this paragraph.

4. The object of providing for the participation in the negotiation of any contracting party with a principle supplying interest, in addition to any contracting party with which the concession was originally negotiated, is to ensure that a contracting party with a larger share in the trade affected by the concession than a contracting party with which the concession was originally negotiated shall have an effective opportunity to protect the contractual right which it enjoys under this Agreement. On the other hand, it is not intended that the scope of the negotiations should be such as to make negotiations and agreement under Article XXVIII unduly difficult nor to create complications in the application of this Article in the future to concessions which result from negotiations thereunder. Accordingly, the CONTRACTING PARTIES should only determine that a contracting party has a principal supplying interest if that contracting party has had, over a reasonable period of time prior to the negotiations, a larger share in the market of the applicant contracting party than a contracting party with which the concession was initially negotiated or would, in the judgement of the CONTRACTING PARTIES, have had such a share in the absence of discriminatory quantitative restrictions maintained by the applicant contracting party. It would therefore not be appropriate for the CONTRACTING PARTIES to determine that more than one contracting party, or in those exceptional cases where there is near equality more than two contracting parties, had a principal supplying interest.

5. Notwithstanding the definition of a principal supplying interest in note 4 to paragraph 1, the CONTRACTING PARTIES may exceptionally determine that a contracting party has a principal supplying interest if the concession in question affects trade which constitutes a major part of the total exports of such contracting party.

6. It is not intended that provision for participation in the negotiations of any contracting party with a principal supplying interest, and for consultation with any contracting party having a substantial interest

in the concession which the applicant contracting party is seeking to modify or withdraw, should have the effect that it should have to pay compensation or suffer retaliation greater than the withdrawal or modification sought, judged in the light of the conditions of trade at the time of the proposed withdrawal or modification, making allowance for any discriminatory quantitative restrictions maintained by the applicant contracting party.

7. The expression "substantial interest" is not capable of a precise definition and accordingly may present difficulties for the CONTRACTING PARTIES. It is, however, intended to be construed to cover only those contracting parties which have, or in the absence of discriminatory quantitative restrictions affecting their exports could reasonably be expected to have, a significant share in the market of the contracting party seeking to modify or withdraw the concession.

Paragraph 4

1. Any request for authorization to enter into negotiations shall be accompanied by all relevant statistical and other data. A decision on such request shall be made within thirty days of its submission.

2. It is recognized that to permit certain contracting parties, depending in large measure on a relatively small number of primary commodities and relying on the tariff as an important aid for furthering diversification of their economies or as an important source of revenue, normally to negotiate for the modification or withdrawal of concessions only under paragraph (**1**) of Article XXVIII, might cause them at such time to make modifications or withdrawals which in the long run would prove unnecessary. To avoid such a situation the CONTRACTING PARTIES shall authorize any such contracting party, under paragraph 4, to enter into negotiations unless they consider this would result in, or contribute substantially towards, such an increase in tariff levels as to threaten the stability of the Schedules to this Agreement or lead to undue disturbance of international trade.

3. It is expected that negotiations authorized under paragraph 4 for modification or withdrawal of a single item, or a very small group of items, could normally be brought to a conclusion in sixty days. It is recognized, however, that such a period will be inadequate for cases involving negotiations for the modification or withdrawal of a larger number of items and in such cases, therefore, it would be appropriate for the CONTRACTING PARTIES to prescribe a longer period.

4. The determination referred to in paragraph 4 *(d)* shall be made by the CONTRACTING PARTIES within thirty days of the submission of the matter to them unless the applicant contracting party agrees to a longer period.

5. In determining under paragraph 4 *(d)* whether an applicant contracting party has unreasonably failed to offer adequate compensation, it is understood that the CONTRACTING PARTIES will take due account of the special position of a contracting party which has bound a high proportion of its tariffs at very low rates of duty and to this extent has less scope than other contracting parties to make compensatory adjustment.

C. Understanding on the Interpretation of Article XXVIII of the General Agreement on Tariffs and Trade 1994

Members hereby agree as follows:

1. For the purposes of modification or withdrawal of a concession, the Member which has the highest ratio of exports affected by the concession (i.e. exports of the product to the market of the Member modifying or withdrawing the concession) to its total exports shall be deemed to have a principal supplying interest if it does not already have an initial negotiating right or a principal supplying interest as provided for in paragraph 1 of Article XXVIII. It is however agreed that this paragraph will be reviewed by the Council for Trade in Goods five years from the date of entry into force of the WTO Agreement with a view to deciding whether this criterion has worked satisfactorily in securing a redistribution of negotiating rights in favour of small and medium-sized exporting Members. If this is not the case, consideration will be given to possible improvements, including, in the light of the availability of adequate data, the adoption of a criterion based on the ratio of exports affected by the concession to exports to all markets of the product in question.

2. Where a Member considers that it has a principal supplying interest in terms of paragraph 1, it should communicate its claim in writing, with supporting evidence, to the Member proposing to modify or withdraw a concession, and at the same time inform the Secretariat. Paragraph 4 of the "Procedures for Negotiations under Article XXVIII" adopted on 10 November 1980 (BISD 27S/26-28) shall apply in these cases.

3. In the determination of which Members have a principal supplying interest (whether as provided for in paragraph 1 above or in paragraph 1 of Article XXVIII) or substantial interest, only trade in the affected product which has taken place on an MFN basis shall be taken into consideration. However, trade in the affected product which has taken place under non-contractual preferences shall also be taken into

account if the trade in question has ceased to benefit from such preferential treatment, thus becoming MFN trade, at the time of the negotiation for the modification or withdrawal of the concession, or will do so by the conclusion of that negotiation.

4. When a tariff concession is modified or withdrawn on a new product (i.e. a product for which three years' trade statistics are not available) the Member possessing initial negotiating rights on the tariff line where the product is or was formerly classified shall be deemed to have an initial negotiating right in the concession in question. The determination of principal supplying and substantial interests and the calculation of compensation shall take into account, *inter alia*, production capacity and investment in the affected product in the exporting Member and estimates of export growth, as well as forecasts of demand for the product in the importing Member. For the purposes of this paragraph, "new product" is understood to include a tariff item created by means of a breakout from an existing tariff line.

5. Where a Member considers that it has a principal supplying or a substantial interest in terms of paragraph 4, it should communicate its claim in writing, with supporting evidence, to the Member proposing to modify or withdraw a concession, and at the same time inform the Secretariat. Paragraph 4 of the above-mentioned "Procedures for Negotiations under Article XXVIII" shall apply in these cases.

6. When an unlimited tariff concession is replaced by a tariff rate quota, the amount of compensation provided should exceed the amount of the trade actually affected by the modification of the concession. The basis for the calculation of compensation should be the amount by which future trade prospects exceed the level of the quota. It is understood that the calculation of future trade prospects should be based on the greater of:

(a) the average annual trade in the most recent representative three-year period, increased by the average annual growth rate of imports in that same period, or by 10 per cent, whichever is the greater; or

(b) trade in the most recent year increased by 10 per cent.

In no case shall a Member's liability for compensation exceed that which would be entailed by complete withdrawal of the concession.

7. Any Member having a principal supplying interest, whether as provided for in paragraph 1 above or in paragraph 1 of Article XXVIII, in a concession which is modified or withdrawn shall be accorded an initial negotiating right in the compensatory concessions, unless another form of compensation is agreed by the Members concerned.

D. Interpretation and Application of Article XXVIII

1. Legal relevance of Article XXVIII negotiations in interpretation of GATT Articles

613. In *EC – Poultry*, Brazil claimed that the MFN principle in Articles I and XIII did not apply to tariff-rate quotas resulting from compensation negotiations under *GATT* Article XXVIII. The Panel rejected this argument and held:

"[I]f a preferential treatment of a particular trading partner not elsewhere justified is permitted under the pretext of 'compensatory adjustment' under Article XXVIII:2, it would create a serious loophole in the multilateral trading system. Such a result would fundamentally alter the overall balance of concessions Article XXVIII is designed to achieve."

614. The Panel concluded that a tariff-rate quota which resulted from negotiations under Article XXVIII of the GATT 1947, and which was incorporated into a Member's Uruguay Round Schedule, must be administered in a non-discriminatory manner consistent with Article XIII of the *GATT 1994*. The Appellate Body agreed:

"We see nothing in Article XXVIII to suggest that compensation negotiated within its framework may be exempt from compliance with the non-discrimination principle inscribed in Articles I and XIII of the GATT 1994. As the Panel observed, this interpretation is, furthermore, supported by the negotiating history of Article XXVIII. Regarding the provision which eventually became Article XXVIII:3, the Chairman of the Tariff Agreements Committee at Geneva in 1947, concluded:

'It was agreed that there was no intention to interfere in any way with the operation of the most-favoured-nation clause. This Article is headed 'Modification of Schedules'. It refers throughout to concessions negotiated under paragraph 1 of Article II, the Schedules, and there is no reference to Article I, which is the Most-Favoured-Nation Clause. Therefore, I think the intent is clear: that in no way should this Article interfere with the operation of the Most-Favoured-Nation Clause.'

Although this statement refers specifically to the MFN clause in Article I of the GATT, logic requires that it applies equally to the non-discriminatory administration of quotas and tariff-rate quotas under Article XIII of the GATT 1994."

2. Review of the Understanding on the Interpretation of Article XXVIII of the GATT 1994

615. On 24 January 2000, the Council for Trade in Goods requested the Committee on Market Access to conduct the review envisaged in paragraph 1 of the Understanding on the Interpretation of Article XXVIII of the *GATT 1994*. On 12 October 2000, the Committee on Market Access agreed to report to the Council for Trade in Goods that the review had been carried out as mandated by that body and that, at that stage, there was no basis to change the criterion contained in paragraph 1 of the aforementioned Understanding, with a reservation that in the future any Member would be free to raise this matter when necessary.

3. Reference to GATT Practice

616. With respect to GATT practice under Article XXVIII, see GATT Analytical Index, pages 933-984.

XXX. Article XXVIII *bis*

A. Text of Article XXVIII *bis*

Article XXVIII *bis*: Tariff Negotiations

1. The contracting parties recognize that customs duties often constitute serious obstacles to trade; thus negotiations on a reciprocal and mutually advantageous basis, directed to the substantial reduction of the general level of tariffs and other charges on imports and exports and in particular to the reduction of such high tariffs as discourage the importation even of minimum quantities, and conducted with due regard to the objectives of this Agreement and the varying needs of individual contracting parties, are of great importance to the expansion of international trade. The CONTRACTING PARTIES may therefore sponsor such negotiations from time to time.

2. *(a)* Negotiations under this Article may be carried out on a selective product-by-product basis or by the application of such multilateral procedures as may be accepted by the contracting parties concerned. Such negotiations may be directed towards the reduction of duties, the binding of duties at then existing levels or undertakings that individual duties or the average duties on specified categories of products shall not exceed specified levels. The binding against increase of low duties or of duty-free treatment shall, in principle, be recognized as a concession equivalent in value to the reduction of high duties.

(b) The contracting parties recognize that in general the success of multilateral negotiations would depend on the participation of all contracting parties which conduct a substantial proportion of their external trade with one another.

3. Negotiations shall be conducted on a basis which affords adequate opportunity to take into account:

(a) the needs of individual contracting parties and individual industries;

(b) the needs of less-developed countries for a more flexible use of tariff protection to assist their economic development and the special needs of these countries to maintain tariffs for revenue purposes; and

(c) all other relevant circumstances, including the fiscal,* developmental, strategic and other needs of the contracting parties concerned.

B. Text of *AD* Article XXVIII *bis*

***Ad* Article XXVIII *bis* Paragraph 3**

It is understood that the reference to fiscal needs would include the revenues aspect of duties and particularly duties imposed primarily for revenue purpose, or duties imposed on products which can be substituted for products subject to revenue duties to prevent the avoidance of such duties.

C. Interpretation and Application of Article XXVIII *bis*

No jurisprudence or decision of a competent WTO body.

Appendix B

BISD 27S/26-28 March 1981 (annexes are not reproduced)

PROCEDURES FOR NEGOTIATIONS UNDER ARTICLE XXVIII

Guidelines adopted on 10 November 1980
(C/113 and Corr.1)

1. A contracting party intending to negotiate for the modification or withdrawal of concessions in accordance with the procedures of Article XXVIII, paragraph 1 - which are also applicable to negotiations under paragraph 5 of that Article - should transmit a notification to that effect to the secretariat which will distribute the notification to all other contracting parties in a secret document.[1] In the case of negotiations under paragraph 4 of Article XXVIII the request for authority to enter into negotiations should be transmitted to the secretariat to be circulated in a secret document and included in the agenda of the next meeting of the Council.

2. The notification or request should include a list of items, with corresponding tariff line numbers, which it is intended to modify or withdraw indicating for each item the contracting parties, if any, with which the item was initially negotiated. It should be indicated whether the intention is to modify a concession or withdraw it, in whole or in part, from the schedule. If a concession is to be modified, the proposed modification should be stated in the notification or circulated as soon as possible thereafter to those contracting parties with which the concession was originally negotiated and those which are recognized, in accordance with paragraph 4 below, to have a principal or a substantial supplying interest. The notification or request should be accompanied by statistics of imports of the products involved, by country of origin, for the last three years for which statistics are available. If specific or mixed duties are affected, both values and quantities should be indicated, if possible.

3. At the same time as the notification is transmitted to the secretariat or when the authorization to enter into negotiations has been granted by the Council - or as soon as possible thereafter - the contracting party referred to in paragraph 1 above should communicate to those contracting parties, with which concessions were initially negotiated, and those which have a principal supplying interest, the compensatory adjustments which it is prepared to offer.

4. Any contracting party which considers that it has a principal or a substantial supplying interest in a concession which is to be the subject of negotiation and consultation under Article XXVIII should communicate its claim in writing to the contracting party referred to in paragraph 1 above and at the same time inform the secretariat. If the contracting party referred to in paragraph 1 above recognizes the claim, the recognition will constitute a determination by the CONTRACTING PARTIES of interest in the sense of Article XXVIII:1.[2] If a claim of interest is not recognized, the contracting party making the claim may refer the matter to the Council. Claims of interest should be made within ninety days following the circulation of the import statistics referred to in paragraph 2 above.

5. Upon completion of each bilateral negotiation the contracting party referred to in paragraph 1 above should send to the secretariat a joint letter on the lines of the model in Annex A attached hereto signed by both parties. To this letter shall be attached a report on the lines of the model in Annex B attached hereto. The report should be initialled by both parties. The secretariat will distribute the letter and the report to all contracting parties in a secret document.

6. Upon completion of all its negotiations the contracting party referred to in paragraph 1 above should send to the secretariat, for distribution in a secret document, a final report on the lines of the model in Annex C attached hereto.

7. Contracting parties will be free to give effect to the changes agreed upon in the negotiations as from the first day of the period referred to in Article XXVIII:1, or, in the case of

[1] The date for submission of a notification for negotiation under Article XXVIII, paragraph 1, shall comply with the provisions of interpretative note 3 to paragraph 1 of Article XXVIII.

[2] If, in exceptional circumstances, the contracting party referred to in paragraph 1 above is not in a position to supply relevant import statistics, it shall give due consideration to export statistics provided by contracting parties claiming an interest in the concession or concessions concerned.

negotiations under paragraph 4 or 5 of Article XXVIII, as from the date on which the conclusion of all the negotiations have been notified as set out in paragraph 6 above. A notification shall be submitted to the secretariat, for circulation to contracting parties, of the date on which these changes will come into force.

8. Formal effect will be given to the changes in the schedules by means of Certifications in accordance with the Decision of the CONTRACTING PARTIES of 26 March 1980.[1]

9. The secretariat will be available at all stages to assist the governments involved in the negotiations and consultations.

10. These procedures are in relevant parts also valid for renegotiations under Article XVIII, paragraph 7, and Article XXIV, paragraph 6.

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[1] See page 25.

Appendic C. Banana Supply in the EU

Tons

ORIGIN	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU	**737,452**	**699,476**	**705,759**	**643,691**	**584,622**	**658,206**	**684,605**	**810,537**	**786,232**	**729,304**	**782,175**	**767,268**	**790,621**	**754,215**
Greece	17,810	18,354	8,084	7,233	3,071	3,138	3,807	3,901	3,589	3,336	3,275	2,909	2,433	2,670
Spain	416,073	354,400	349,452	330,875	321,555	369,387	345,943	403,999	437,414	362,188	397,578	420,919	407,343	400,941
France	265,666	294,845	313,610	279,837	234,130	251,280	310,652	374,747	314,793	342,009	358,861	322,758	358,943	329,223
Martinique	*194,498*	*185,836*	*198,199*	*180,861*	*151,965*	*188,073*	*249,733*	*277,013*	*240,499*	*258,501*	*271,269*	*233,716*	*263,880*	*243,706*
Guadeloupe	*71,168*	*109,009*	*115,411*	*98,976*	*82,165*	*63,207*	*60,919*	*97,734*	*74,294*	*83,508*	*87,592*	*89,042*	*95,063*	*85,517*
Portugal	37,903	31,877	34,613	25,746	25,866	34,401	24,203	27,890	30,436	21,771	22,461	20,682	21,903	21,382
ACP Countries	**621,910**	**596,438**	**680,205**	**748,126**	**726,987**	**763,965**	**800,075**	**693,054**	**654,853**	**675,987**	**755,787**	**728,776**	**726,681**	**786,555**
ex-Trad.ACP	***617,606***	***584,519***	***641,007***	***683,583***	***639,742***	***687,163***	***733,992***	***640,413***	***593,235***	***631,129***	***692,862***	***639,104***	***625,884***	***674,835***
Cameroon*	77,628	115,116	110,357	146,901	158,166	165,289	166,622	157,123	155,000	160,638	204,978	215,455	229,913	292,868
Ivory-Coast	95,189	116,407	144,307	161,258	149,084	160,269	180,735	166,247	158,243	192,522	200,163	216,699	210,788	202,036
Belize	24,040	19,617	28,494	38,516	46,980	41,126	54,109	53,144	53,431	55,650	68,558	51,609	38,178	73,806
Jamaïca	63,181	70,117	74,826	77,390	76,294	83,751	89,493	76,978	61,929	51,635	40,941	42,958	40,600	41,775
Saint-Lucia	127,225	99,824	122,066	113,303	91,542	101,492	106,628	70,686	70,461	65,532	72,566	34,727	49,313	32,520
Saint-Vincent	81,535	62,263	71,320	57,608	32,055	47,673	44,173	29,981	38,737	37,910	42,923	30,829	32,520	20,911
Dominique	52,415	54,154	51,606	52,699	42,868	33,260	39,138	35,290	27,144	27,583	27,713	17,516	17,467	10,472
Grenada	8,189	8,186	6,015	6,720	5,325	4,558	2,007	101	54	621	784	591	557	448
Surinam	27,705	27,745	29,950	27,984	32,721	27,984	25,966	29,257	21,218	39,029	34,234	28,720	6,548	0
Somalia	57,785	8,081	181	501	4,634	21,701	25,121	21,608	7,018	0	0	0	0	0
Cape Verde	2,715	3,011	1,876	684	73	60	0	0	0	10	2	0	0	0
Madagascar	0	0	10	19	0	0	0	0	0	0	0	0	0	0
ex non ACP tr	***4,304***	***11,919***	***39,199***	***64,543***	***87,245***	***76,803***	***66,082***	***52,641***	***61,619***	***44,858***	***62,925***	***89,673***	***100,797***	***111,720***
Dominican Rep	3,836	9,703	38,512	61,677	86,074	75,045	61,250	49,031	56,199	42,217	59,807	85,886	97,331	109,434
Ghana	62	551	100	218	383	1,589	2,797	3,194	4,233	2,526	2,972	3,345	3,201	928
Other	406	1,665	587	2,648	788	168	2,036	416	1,186	115	146	441	265	1,358
Dollar Zone in 1000 t	**2,362.8**	**2,640.6**	**2,730.8**	**2,559.7**	**2,450.0**	**2,405.1**	**2,470.3**	**2,462.1**	**2,426.4**	**2,521.8**	**2,543.1**	**2,474.6**	**2,5613**	**2,575.8**
Ecuador	381,014	646,209	745,058	650,631	612,039	632,174	685,695	738,474	568,534	696,789	690,893	705,071	828,822	798,462
CostaRica	643,065	607,793	520,331	565,033	726,804	564,465	604,191	603,053	639,949	662,795	655,652	634,970	686,820	722,567
Colombia	420,914	518,159	533,200	451,780	511,316	557,183	652,533	568,717	540,618	554,823	617,371	645,745	665,723	671,597
Panama	648,937	591,392	601,095	568,702	426,932	415,634	310,741	357,921	416,907	422,398	389,044	347,869	307,047	303,471
Brazil	0	0	0	0	0	0	0	161	119	4,059	12,673	16,624	36,053	46,421
Venezuela	50	40	45	147	1,854	13,346	17,789	30,189	30,069	41,472	18,240	12,113	9,276	11,981
Honduras	174,296	181,389	239,184	204,048	27,535	56,030	114,256	70,445	150,714	68,168	107,793	106,432	20,396	10,798
Peru	0	0	0	0	0	0	0	0	0	0	0	1,178	5,311	5,393
Guatemala	15,994	17,665	39,700	32,538	20,041	57,536	61,824	58,329	61,227	42,402	30,094	3,160	49	1,685
Mexico	41	38	11,045	112	58	50	1,605	2,828	6,823	11,853	1,077	54	38	129
Nicaragua	49,533	59,521	28,816	10,553	8	0	12,610	29,674	10,740	15,336	19,855	1,160	849	43
Other	13,660	5,668	5,055	6,481	3,888	3,390	2,771	1,686	707	1,728	442	190	870	2,460
Undefined	15,298	12,706	7,225	69,639	119,503	105,322	6,266	624	0	0	0	0	0	829
ACP+ $Z in 1000 t	**2,984.7**	**3,237.0**	**3,411.0**	**3,307.8**	**3,177.0**	**3,169.1**	**3,270.4**	**3,155.1**	**3,081.3**	**3,197.8**	**3,298.9**	**3,203.3**	**3,287.9**	**3,362.4**
ACP+$+EU in 1000 t	**3,722.2**	**3,936.5**	**4,116.7**	**3,951.5**	**3,761.6**	**3,827.3**	**3,955.0**	**3,965.7**	**3,867.5**	**3,927.1**	**4,081.1**	**3,970.6**	**4,078.6**	**4,116.6**

Updated : DV 20/4/2004

* Imports From Cameroon in 1998 are estimated at 155 000 t.

Source: MS Communications (EU) / Comext (ACP & DOLLAR Z.) / Austria, Finland and Sweden 1990-1994 from respective national trade statistics

Appendix D
[Taken from 05665en.pdf, for the EU Agrifin working party of 17 December 1999]
Calculation of the financial implications of the proposal

Calculation data normal year

1. Union banana balance sheet	3 934 000
(a) EU quota	854 000
volume used	854 000
unused	**0**
(b) bound quota (A)	2 200 000
(c) autonomous quota (B)	353 000
volume available	2 553 000
average volume used	2 420 000
unused	133 000
(d) traditional ACP (C)	850 000
volume used	660 000
unused	**190 000**
additional total available	**323 000**
2. Use of available quantities	
(a) total quantities added t	**323 000**
(b) increase in supply %	8,2%
(c) reverse demand elasticity	-1,54
(d) resulting price reduction %	-12.6%
(e) average CIF prices recorded EUR/t	528,0
(f) unit reduction of prices EUR/t	-66,7
(g) new prices resulting EUR/t	461,3
(h) additional reduction – increased competition %	-5%
(i) additional unit reduction of prices EUR/t	-23,1
(j) total unit reduction EUR/t	-89,8
(k) total price drop %	-17,0%
3. Total supplementary expenditure EUR million	77
4. Revenue from customs duties	
(a) duties from the A and B quotas 75	10
(b) estimated duties from the C quota	20
5. Total additional duties UR million	30